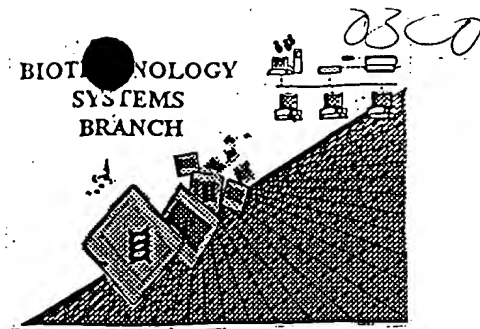


MIM

BIOTECHNOLOGY  
SYSTEMS  
BRANCH



## RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/988,384

Source: OIPE

Date Processed by STIC: 11/26/01

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: [patin21help@uspto.gov](mailto:patin21help@uspto.gov) or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: [patin3help@uspto.gov](mailto:patin3help@uspto.gov) or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:

### Checker Version 3.0

The Checker Version 3.0 application is a state-of-the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.

Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO).

Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be down loaded from the USPTO website at the following address:

<http://www.uspto.gov/web/offices/pac/checker>

## Raw Sequence Listing Error Summary

### ERROR DETECTED

### SUGGESTED CORRECTION

SERIAL NUMBER: 09/988,384

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1 ☒ **Wrapped Nucleics  
Wrapped Aminos** The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
  
- 2 ☐ **Invalid Line Length** The rules require that a line not exceed 72 characters in length. This includes white spaces.
  
- 3 ☒ **Misaligned Amino  
Numbering** The numbering under each 5<sup>th</sup> amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
  
- 4 ☐ **Non-ASCII** The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
  
- 5 ☐ **Variable Length** Sequence(s) \_\_\_\_\_ contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
  
- 6 ☐ **PatentIn 2.0  
"bug"** A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) \_\_\_\_\_. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
  
- 7 ☐ **Skipped Sequences  
(OLD RULES)** Sequence(s) \_\_\_\_\_ missing. If intentional, please insert the following lines for each skipped sequence:  
(2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)  
(i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)  
(xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)  
This sequence is intentionally skipped  
  
Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.
  
- 8 ☐ **Skipped Sequences  
(NEW RULES)** Sequence(s) \_\_\_\_\_ missing. If intentional, please insert the following lines for each skipped sequence.  
<210> sequence id number  
<400> sequence id number  
000
  
- 9 ☒ **Use of n's or Xaa's  
(NEW RULES)** Use of n's and/or Xaa's have been detected in the Sequence Listing.  
Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present.  
In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
  
- 10 ☐ **Invalid <213>  
Response** Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence
  
- 11 ☐ **Use of <220>** Sequence(s) \_\_\_\_\_ missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section.  
(See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
  
- 12 ☐ **PatentIn 2.0  
"bug"** Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.

OIPE

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:27

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

Does Not Comply  
Corrected Diskette Needed

Errors on p. 27-

4 <110> APPLICANT: Regents of the University of Minnesota, et al.  
 6 <120> TITLE OF INVENTION: DNA encoding methymycin and pikromycin  
 9 <130> FILE REFERENCE: 600.438W01  
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/988,384  
 C--> 11 <141> CURRENT FILING DATE: 2001-11-19  
 11 <150> PRIOR APPLICATION NUMBER: US 09/105,537  
 12 <151> PRIOR FILING DATE: 1998-06-26  
 14 <160> NUMBER OF SEQ ID NOS: 53  
 16 <170> SOFTWARE: FastSEQ for Windows Version 3.0

## ERRORED SEQUENCES

2294 <210> SEQ ID NO: 6  
 2295 <211> LENGTH: 12199  
 2296 <212> TYPE: PRT  
 2297 <213> ORGANISM: Streptomyces venezuelae  
 2299 <400> SEQUENCE: 6  
 2300 Met Ala Phe Ser Pro Gln Gly Gly Arg His Glu Leu Gly Gln Asn Phe  
 2301 1 5 10 15  
 2302 Leu Val Asp Arg Ser Val Ile Asp Glu Ile Asp Gly Leu Val Ala Arg  
 2303 20 25 30  
 2304 Thr Lys Gly Pro Ile Leu Glu Ile Gly Pro Gly Asp Gly Ala Leu Thr  
 2305 35 40 45  
 2306 Leu Pro Leu Ser Arg His Gly Arg Pro Ile Thr Ala Val Glu Leu Asp  
 2307 50 55 60  
 2308 Gly Arg Arg Ala Gln Arg Leu Gly Ala Arg Thr Pro Gly His Val Thr  
 2309 65 70 75 80  
 2310 Val Val His His Asp Phe Leu Gln Tyr Pro Leu Pro Arg Asn Pro His  
 2311 85 90 95  
 2312 Val Val Val Gly Asn Val Pro Phe His Leu Thr Thr Ala Ile Met Arg  
 2313 100 105 110  
 2314 Arg Leu Leu Asp Ala Gln His Trp His Thr Ala Val Leu Leu Val Gln  
 2315 115 120 125  
 2316 Trp Glu Val Ala Arg Arg Arg Ala Gly Val Gly Gly Ser Thr Leu Leu  
 2317 130 135 140  
 2318 Thr Ala Gly Trp Ala Pro Trp Tyr Glu Phe Asp Leu His Ser Arg Val  
 2319 145 150 155 160  
 2320 Pro Ala Arg Ala Phe Arg Pro Met Pro Gly Val Asp Gly Gly Val Leu  
 2321 165 170 175  
 2322 Ala Ile Arg Arg Arg Ser Ala Pro Leu Val Gly Gln Val Lys Thr Tyr  
 2323 180 185 190  
 2324 Gln Asp Phe Val Arg Gln Val Phe Thr Gly Lys Gly Asn Gly Leu Lys  
 2325 195 200 205  
 2326 Glu Ile Leu Arg Arg Thr Gly Arg Ile Ser Gln Arg Asp Leu Ala Thr  
 2327 210 215 220  
 2328 Trp Leu Arg Arg Asn Glu Ile Ser Pro His Ala Leu Pro Lys Asp Leu

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

2329	225		230		235		240
2330	Lys	Pro	Gly	Gln	Trp	Ala	Ser
2331				245		250	
2332	Asp	Gly	Ser	Phe	Asp	Gly	Thr
2333				260		265	
2334	Gly	Ala	Ala	Arg	Val	Gly	Ala
2335				275		280	
2336	Ser	Arg	Arg	Gly	Val	Pro	Gln
2337				290		295	
2338	Arg	Ser	Ser	Thr	Gly	Thr	Glu
2339				305		310	
2340	Ser	Ala	Met	Ala	Met	Arg	Asp
2341				325		330	
2342	Thr	Leu	Arg	Arg	Glu	Leu	Gly
2343				340		345	
2344	Val	Arg	Asn	Leu	Val	Thr	His
2345				355		360	
2346	Glu	Ile	Gly	Pro	Gly	Lys	Gly
2347				370		375	
2348	Phe	Asp	Thr	Val	Thr	Val	Val
2349				385		390	
2350	Val	Arg	Arg	Lys	Phe	Glu	Gly
2351				405		410	
2352	Phe	Leu	Asp	Phe	Arg	Ile	Pro
2353				420		425	
2354	Val	Pro	Phe	Gly	Ile	Thr	Thr
2355				435		440	
2356	Thr	Asn	Trp	Gln	Ser	Ala	Ala
2357				450		455	
2358	Lys	Arg	Ala	Gly	Arg	Ser	Gly
2359				465		470	
2360	Pro	Trp	Tyr	Glu	Phe	Ala	Val
2361				485		490	
2362	Arg	Pro	Met	Pro	Arg	Val	Asp
2363				500		505	
2364	Pro	Gln	Pro	Leu	Leu	Pro	Glu
2365				515		520	
2366	Ala	Glu	Ala	Val	Phe	Thr	Gly
2367				530		535	
2368	Arg	Arg	His	Ile	Pro	Lys	Arg
2369				545		550	
2370	Gly	Ile	Pro	Asp	Gly	Gly	Leu
2371				565		570	
2372	Ile	Ala	Leu	Phe	Gln	Ala	Ser
2373				580		585	
2374	Gly	Thr	Arg	Met	Pro	Gly	Gln
2375				595		600	
2376	Asp	Ser	Glu	Thr	Ser	Arg	Ala
2377				610		615	

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2378 Pro Thr Arg Gly Gly Glu Pro Cys Ala Pro Arg Ala Gln Val Arg Gln
2379 625 630 635 640
2380 Thr Lys Gly Arg Gln Gly Ala Arg Gly Ser Ser Tyr Gly Arg Arg Thr
2381 645 650 655
2382 Gly Arg Met Ser Ser Ala Gly Ile Thr Arg Thr Gly Ala Arg Thr Pro
2383 660 665 670
2384 Val Thr Gly Arg Gly Ala Ala Ala Trp Asp Thr Gly Glu Val Arg Val
2385 675 680 685
2386 Arg Arg Gly Leu Pro Pro Ala Gly Pro Asp His Ala Glu His Ser Phe
2387 690 695 700
2388 Ser Arg Ala Pro Thr Gly Asp Val Arg Ala Glu Leu Ile Arg Gly Glu
2389 705 710 715 720
2390 Met Ser Thr Val Ser Lys Ser Glu Ser Glu Glu Phe Val Ser Val Ser
2391 725 730 735
2392 Asn Asp Ala Gly Ser Ala His Gly Thr Ala Glu Pro Val Ala Val Val
2393 740 745 750
2394 Gly Ile Ser Cys Arg Val Pro Gly Ala Arg Asp Pro Arg Glu Phe Trp
2395 755 760 765
2396 Glu Leu Leu Ala Ala Gly Gly Gln Ala Val Thr Asp Val Pro Ala Asp
2397 770 775 780
2398 Arg Trp Asn Ala Gly Asp Phe Tyr Asp Pro Asp Arg Ser Ala Pro Gly
2399 785 790 795 800
2400 Arg Ser Asn Ser Arg Trp Gly Gly Phe Ile Glu Asp Val Asp Arg Phe
2401 805 810 815
2402 Asp Ala Ala Phe Phe Gly Ile Ser Pro Arg Glu Ala Ala Glu Met Asp
2403 820 825 830
2404 Pro Gln Gln Arg Leu Ala Leu Glu Leu Gly Trp Glu Ala Leu Glu Arg
2405 835 840 845
2406 Ala Gly Ile Asp Pro Ser Ser Leu Thr Gly Thr Arg Thr Gly Val Phe
2407 850 855 860
2408 Ala Gly Ala Ile Trp Asp Asp Tyr Ala Thr Leu Lys His Arg Gln Gly
2409 865 870 875 880
2410 Gly Ala Ala Ile Thr Pro His Thr Val Thr Gly Leu His Arg Gly Ile
2411 885 890 895
2412 Ile Ala Asn Arg Leu Ser Tyr Thr Leu Gly Leu Arg Gly Pro Ser Met
2413 900 905 910
2414 Val Val Asp Ser Gly Gln Ser Ser Leu Val Ala Val His Leu Ala
2415 915 920 925
2416 Cys Glu Ser Leu Arg Arg Gly Glu Ser Glu Leu Ala Leu Ala Gly Gly
2417 930 935 940
2418 Val Ser Leu Asn Leu Val Pro Asp Ser Ile Ile Gly Ala Ser Lys Phe
2419 945 950 955 960
2420 Gly Gly Leu Ser Pro Asp Gly Arg Ala Tyr Thr Phe Asp Ala Arg Ala
2421 965 970 975
2422 Asn Gly Tyr Val Arg Gly Glu Gly Gly Gly Phe Val Val Leu Lys Arg
2423 980 985 990
2424 Leu Ser Arg Ala Val Ala Asp Gly Asp Pro Val Leu Ala Val Ile Arg
2425 995 1000 1005
2426 Gly Ser Ala Val Asn Asn Gly Gly Ala Ala Gln Gly Met Thr Thr Pro

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2427      1010      1015      1020
2428 Asp Ala Gln Ala Gln Glu Ala Val Leu Arg Glu Ala His Glu Arg Ala
2429      1025      1030      1035      1040
2430 Gly Thr Ala Pro Ala Asp Val Arg Tyr Val Glu Leu His Gly Thr Gly
2431      1045      1050      1055
2432 Thr Pro Val Gly Asp Pro Ile Glu Ala Ala Leu Gly Ala Ala Leu
2433      1060      1065      1070
2434 Gly Thr Gly Arg Pro Ala Gly Gln Pro Leu Leu Val Gly Ser Val Lys
2435      1075      1080      1085
2436 Thr Asn Ile Gly His Leu Glu Gly Ala Ala Gly Ile Ala Gly Leu Ile
2437      1090      1095      1100
2438 Lys Ala Val Leu Ala Val Arg Gly Arg Ala Leu Pro Ala Ser Leu Asn
2439      1105      1110      1115      1120
2440 Tyr Glu Thr Pro Asn Pro Ala Ile Pro Phe Glu Glu Leu Asn Leu Arg
2441      1125      1130      1135
2442 Val Asn Thr Glu Tyr Leu Pro Trp Glu Pro Glu His Asp Gly Gln Arg
2443      1140      1145      1150
2444 Met Val Val Gly Val Ser Ser Phe Gly Met Gly Gly Thr Asn Ala His
2445      1155      1160      1165
2446 Val Val Leu Glu Glu Ala Pro Gly Gly Cys Arg Gly Ala Ser Val Val
2447      1170      1175      1180
2448 Glu Ser Thr Val Gly Gly Ser Ala Val Gly Gly Gly Val Val Pro Trp
2449      1185      1190      1195      1200
2450 Val Val Ser Ala Lys Ser Ala Ala Ala Leu Asp Ala Gln Ile Glu Arg
2451      1205      1210      1215
2452 Leu Ala Ala Phe Ala Ser Arg Asp Arg Thr Asp Gly Val Asp Ala Gly
2453      1220      1225      1230
2454 Ala Val Asp Ala Gly Ala Val Asp Ala Gly Ala Val Ala Arg Val Leu
2455      1235      1240      1245
2456 Ala Gly Gly Arg Ala Gln Phe Glu His Arg Ala Val Val Val Gly Ser
2457      1250      1255      1260
2458 Gly Pro Asp Asp Leu Ala Ala Ala Leu Ala Ala Pro Glu Gly Leu Val
2459      1265      1270      1275      1280
2460 Arg Gly Val Ala Ser Gly Val Gly Arg Val Ala Phe Val Phe Pro Gly
2461      1285      1290      1295
2462 Gln Gly Thr Gln Trp Ala Gly Met Gly Ala Glu Leu Leu Asp Ser Ser
2463      1300      1305      1310
2464 Ala Val Phe Ala Ala Ala Met Ala Glu Cys Glu Ala Ala Leu Ser Pro
2465      1315      1320      1325
2466 Tyr Val Asp Trp Ser Leu Glu Ala Val Val Arg Gln Ala Pro Gly Ala
2467      1330      1335      1340
2468 Pro Thr Leu Glu Arg Val Asp Val Val Gln Pro Val Thr Phe Ala Val
2469      1345      1350      1355      1360
2470 Met Val Ser Leu Ala Arg Val Trp Gln His His Gly Val Thr Pro Gln
2471      1365      1370      1375
2472 Ala Val Val Gly His Ser Gln Gly Glu Ile Ala Ala Ala Tyr Val Ala
2473      1380      1385      1390
2474 Gly Ala Leu Ser Leu Asp Asp Ala Ala Arg Val Val Thr Leu Arg Ser
2475      1395      1400      1405

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2476 Lys Ser Ile Ala Ala His Leu Ala Gly Lys Gly Gly Met Leu Ser Leu
2477      1410      1415      1420
2478 Ala Leu Ser Glu Asp Ala Val Leu Glu Arg Leu Ala Gly Phe Asp Gly
2479      1425      1430      1435      1440
2480 Leu Ser Val Ala Ala Val Asn Gly Pro Thr Ala Thr Val Val Ser Gly
2481      1445      1450      1455
2482 Asp Pro Val Gln Ile Glu Glu Leu Ala Arg Ala Cys Glu Ala Asp Gly
2483      1460      1465      1470
2484 Val Arg Ala Arg Val Ile Pro Val Asp Tyr Ala Ser His Ser Arg Gln
2485      1475      1480      1485
2486 Val Glu Ile Ile Glu Ser Glu Leu Ala Glu Val Leu Ala Gly Leu Ser
2487      1490      1495      1500
2488 Pro Gln Ala Pro Arg Val Pro Phe Phe Ser Thr Leu Glu Gly Ala Trp
2489      1505      1510      1515      1520
2490 Ile Thr Glu Pro Val Leu Asp Gly Gly Tyr Trp Tyr Arg Asn Leu Arg
2491      1525      1530      1535
2492 His Arg Val Gly Phe Ala Pro Ala Val Glu Thr Leu Ala Thr Asp Glu
2493      1540      1545      1550
2494 Gly Phe Thr His Phe Val Glu Val Ser Ala His Pro Val Leu Thr Met
2495      1555      1560      1565
2496 Ala Leu Pro Gly Thr Val Thr Gly Leu Ala Thr Leu Arg Arg Asp Asn
2497      1570      1575      1580
2498 Gly Gly Gln Asp Arg Leu Val Ala Ser Leu Ala Glu Ala Trp Ala Asn
2499      1585      1590      1595      1600
2500 Gly Leu Ala Val Asp Trp Ser Pro Leu Leu Pro Ser Ala Thr Gly His
2501      1605      1610      1615
2502 His Ser Asp Leu Pro Thr Tyr Ala Phe Gln Thr Glu Arg His Trp Leu
2503      1620      1625      1630
2504 Gly Glu Ile Glu Ala Leu Ala Pro Ala Gly Glu Pro Ala Val Gln Pro
2505      1635      1640      1645
2506 Ala Val Leu Arg Thr Glu Ala Ala Glu Pro Ala Glu Leu Asp Arg Asp
2507      1650      1655      1660
2508 Glu Gln Leu Arg Val Ile Leu Asp Lys Val Arg Ala Gln Thr Ala Gln
2509      1665      1670      1675      1680
2510 Val Leu Gly Tyr Ala Thr Gly Gly Gln Ile Glu Val Asp Arg Thr Phe
2511      1685      1690      1695
2512 Arg Glu Ala Gly Cys Thr Ser Leu Thr Gly Val Asp Leu Arg Asn Arg
2513      1700      1705      1710
2514 Ile Asn Ala Ala Phe Gly Val Arg Met Ala Pro Ser Met Ile Phe Asp
2515      1715      1720      1725
2516 Phe Pro Thr Pro Glu Ala Leu Ala Glu Gln Leu Leu Val Val His
2517      1730      1735      1740
2518 Gly Glu Ala Ala Ala Asn Pro Ala Gly Ala Glu Pro Ala Pro Val Ala
2519      1745      1750      1755      1760
2520 Ala Ala Gly Ala Val Asp Glu Pro Val Ala Ile Val Gly Met Ala Cys
2521      1765      1770      1775
2522 Arg Leu Pro Gly Gly Val Ala Ser Pro Glu Asp Leu Trp Arg Leu Val
2523      1780      1785      1790
2524 Ala Gly Gly Gly Asp Ala Ile Ser Glu Phe Pro Gln Asp Arg Gly Trp

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

2525	1795	1800	1805
2526	Asp Val Glu Gly Leu Tyr His Pro Asp Pro Glu His Pro Gly Thr Ser		
2527	1810	1815	1820
2528	Tyr Val Arg Gln Gly Gly Phe Ile Glu Asn Val Ala Gly Phe Asp Ala		
2529	1825	1830	1835
2530	Ala Phe Phe Gly Ile Ser Pro Arg Glu Ala Leu Ala Met Asp Pro Gln		1840
2531	1845	1850	1855
2532	Gln Arg Leu Leu Leu Glu Thr Ser Trp Glu Ala Val Glu Asp Ala Gly		
2533	1860	1865	1870
2534	Ile Asp Pro Thr Ser Leu Arg Gly Arg Gln Val Gly Val Phe Thr Gly		
2535	1875	1880	1885
2536	Ala Met Thr His Glu Tyr Gly Pro Ser Leu Arg Asp Gly Gly Glu Gly		
2537	1890	1895	1900
2538	Leu Asp Gly Tyr Leu Leu Thr Gly Asn Thr Ala Ser Val Met Ser Gly		
2539	1905	1910	1915
2540	Arg Val Ser Tyr Thr Leu Gly Leu Glu Gly Pro Ala Leu Thr Val Asp		
2541	1925	1930	1935
2542	Thr Ala Cys Ser Ser Ser Leu Val Ala Leu His Leu Ala Val Gln Ala		
2543	1940	1945	1950
2544	Leu Arg Lys Gly Glu Val Asp Met Ala Leu Ala Gly Gly Val Ala Val		
2545	1955	1960	1965
2546	Met Pro Thr Pro Gly Met Phe Val Glu Phe Ser Arg Gln Arg Gly Leu		
2547	1970	1975	1980
2548	Ala Gly Asp Gly Arg Ser Lys Ala Phe Ala Ala Ser Ala Asp Gly Thr		
2549	1985	1990	1995
2550	Ser Trp Ser Glu Gly Val Gly Val Leu Leu Val Glu Arg Leu Ser Asp		
2551	2005	2010	2015
2552	Ala Arg Arg Asn Gly His Gln Val Leu Ala Val Val Arg Gly Ser Ala		
2553	2020	2025	2030
2554	Leu Asn Gln Asp Gly Ala Ser Asn Gly Leu Thr Ala Pro Asn Gly Pro		
2555	2035	2040	2045
2556	Ser Gln Gln Arg Val Ile Arg Arg Ala Leu Ala Asp Ala Arg Leu Thr		
2557	2050	2055	2060
2558	Thr Ser Asp Val Asp Val Val Glu Ala His Gly Thr Gly Thr Arg Leu		
2559	2065	2070	2075
2560	Gly Asp Pro Ile Glu Ala Gln Ala Leu Ile Ala Thr Tyr Gly Gln Gly		
2561	2085	2090	2095
2562	Arg Asp Asp Glu Gln Pro Leu Arg Leu Gly Ser Leu Lys Ser Asn Ile		
2563	2100	2105	2110
2564	Gly His Thr Gln Ala Ala Ala Gly Val Ser Gly Val Ile Lys Met Val		
2565	2115	2120	2125
2566	Gln Ala Met Arg His Gly Leu Leu Pro Lys Thr Leu His Val Asp Glu		
2567	2130	2135	2140
2568	Pro Ser Asp Gln Ile Asp Trp Ser Ala Gly Ala Val Glu Leu Leu Thr		
2569	2145	2150	2155
2570	Glu Ala Val Asp Trp Pro Glu Lys Gln Asp Gly Gly Leu Arg Arg Ala		
2571	2165	2170	2175
2572	Ala Val Ser Ser Phe Gly Ile Ser Gly Thr Asn Ala His Val Val Leu		
2573	2180	2185	2190



## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2574  Glu Glu Ala Pro Val Val Val Glu Gly Ala Ser Val Val Glu Pro Ser
2575          2195          2200          2205
2576  Val Gly Gly Ser Ala Val Gly Gly Gly Val Thr Pro Trp Val Val Ser
2577          2210          2215          2220
2578  Ala Lys Ser Ala Ala Ala Leu Asp Ala Gln Ile Glu Arg Leu Ala Ala
2579  2225          2230          2235          2240
2580  Phe Ala Ser Arg Asp Arg Thr Asp Asp Ala Asp Ala Gly Ala Val Asp
2581          2245          2250          2255
2582  Ala Gly Ala Val Ala His Val Leu Ala Asp Gly Arg Ala Gln Phe Glu
2583          2260          2265          2270
2584  His Arg Ala Val Ala Leu Gly Ala Gly Ala Asp Asp Leu Val Gln Ala
2585          2275          2280          2285
2586  Leu Ala Asp Pro Asp Gly Leu Ile Arg Gly Thr Ala Ser Gly Val Gly
2587          2290          2295          2300
2588  Arg Val Ala Phe Val Phe Pro Gly Gln Gly Thr Gln Trp Ala Gly Met
2589  2305          2310          2315          2320
2590  Gly Ala Glu Leu Leu Asp Ser Ser Ala Val Phe Ala Ala Ala Met Ala
2591          2325          2330          2335
2592  Glu Cys Glu Ala Ala Leu Ser Pro Tyr Val Asp Trp Ser Leu Glu Ala
2593          2340          2345          2350
2594  Val Val Arg Gln Ala Pro Gly Ala Pro Thr Leu Glu Arg Val Asp Val
2595          2355          2360          2365
2596  Val Gln Pro Val Thr Phe Ala Val Met Val Ser Leu Ala Arg Val Trp
2597          2370          2375          2380
2598  Gln His His Gly Val Thr Pro Gln Ala Val Val Gly His Ser Gln Gly
2599  2385          2390          2395          2400
2600  Glu Ile Ala Ala Ala Tyr Val Ala Gly Ala Leu Pro Leu Asp Asp Ala
2601          2405          2410          2415
2602  Ala Arg Val Val Thr Leu Arg Ser Lys Ser Ile Ala Ala His Leu Ala
2603          2420          2425          2430
2604  Gly Lys Gly Gly Met Leu Ser Leu Ala Leu Asn Glu Asp Ala Val Leu
2605          2435          2440          2445
2606  Glu Arg Leu Ser Asp Phe Asp Gly Leu Ser Val Ala Ala Val Asn Gly
2607          2450          2455          2460
2608  Pro Thr Ala Thr Val Val Ser Gly Asp Pro Val Gln Ile Glu Glu Leu
2609  2465          2470          2475          2480
2610  Ala Gln Ala Cys Lys Ala Asp Gly Phe Arg Ala Arg Ile Ile Pro Val
2611          2485          2490          2495
2612  Asp Tyr Ala Ser His Ser Arg Gln Val Glu Ile Ile Glu Ser Glu Leu
2613          2500          2505          2510
2614  Ala Gln Val Leu Ala Gly Leu Ser Pro Gln Ala Pro Arg Val Pro Phe
2615          2515          2520          2525
2616  Phe Ser Thr Leu Glu Gly Thr Trp Ile Thr Glu Pro Val Leu Asp Gly
2617          2530          2535          2540
2618  Thr Tyr Trp Tyr Arg Asn Leu Arg His Arg Val Gly Phe Ala Pro Ala
2619  2545          2550          2555          2560
2620  Ile Glu Thr Leu Ala Val Asp Glu Gly Phe Thr His Phe Val Glu Val
2621          2565          2570          2575
2622  Ser Ala His Pro Val Leu Thr Met Thr Leu Pro Glu Thr Val Thr Gly

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

2623		2580		2585		2590
2624	Leu Gly Thr Leu Arg Arg Glu Gln Gly Gly Gln Glu Arg Leu Val Thr					
2625		2595		2600		2605
2626	Ser Leu Ala Glu Ala Trp Val Asn Gly Leu Pro Val Ala Trp Thr Ser					
2627		2610		2615		2620
2628	Leu Leu Pro Ala Thr Ala Ser Arg Pro Gly Leu Pro Thr Tyr Ala Phe					
2629		2625		2630		2635
2630	Gln Ala Glu Arg Tyr Trp Leu Glu Asn Thr Pro Ala Ala Leu Ala Thr					
2631		2645		2650		2655
2632	Gly Asp Asp Trp Arg Tyr Arg Ile Asp Trp Lys Arg Leu Pro Ala Ala					
2633		2660		2665		2670
2634	Glu Gly Ser Glu Arg Thr Gly Leu Ser Gly Arg Trp Leu Ala Val Thr					
2635		2675		2680		2685
2636	Pro Glu Asp His Ser Ala Gln Ala Ala Ala Val Leu Thr Ala Leu Val					
2637		2690		2695		2700
2638	Asp Ala Gly Ala Lys Val Glu Val Leu Thr Ala Gly Ala Asp Asp Asp					
2639		2705		2710		2715
2640	Arg Glu Ala Leu Ala Ala Arg Leu Thr Ala Leu Thr Thr Gly Asp Gly					
2641		2725		2730		2735
2642	Phe Thr Gly Val Val Ser Leu Leu Asp Gly Leu Val Pro Gln Val Ala					
2643		2740		2745		2750
2644	Trp Val Gln Ala Leu Gly Asp Ala Gly Ile Lys Ala Pro Leu Trp Ser					
2645		2755		2760		2765
2646	Val Thr Gln Gly Ala Val Ser Val Gly Arg Leu Asp Thr Pro Ala Asp					
2647		2770		2775		2780
2648	Pro Asp Arg Ala Met Leu Trp Gly Leu Gly Arg Val Val Ala Leu Glu					
2649		2785		2790		2795
2650	His Pro Glu Arg Trp Ala Gly Leu Val Asp Leu Pro Ala Gln Pro Asp					
2651		2805		2810		2815
2652	Ala Ala Ala Leu Ala His Leu Val Thr Ala Leu Ser Gly Ala Thr Gly					
2653		2820		2825		2830
2654	Glu Asp Gln Ile Ala Ile Arg Thr Thr Gly Leu His Ala Arg Arg Leu					
2655		2835		2840		2845
2656	Ala Arg Ala Pro Leu His Gly Arg Arg Pro Thr Arg Asp Trp Gln Pro					
2657		2850		2855		2860
2658	His Gly Thr Val Leu Ile Thr Gly Gly Thr Gly Ala Leu Gly Ser His					
2659		2865		2870		2875
2660	Ala Ala Arg Trp Met Ala His His Gly Ala Glu His Leu Leu Leu Val					
2661		2885		2890		2895
2662	Ser Arg Ser Gly Glu Gln Ala Pro Gly Ala Thr Gln Leu Thr Ala Glu					
2663		2900		2905		2910
2664	Leu Thr Ala Ser Gly Ala Arg Val Thr Ile Ala Ala Cys Asp Val Ala					
2665		2915		2920		2925
2666	Asp Pro His Ala Met Arg Thr Leu Leu Asp Ala Ile Pro Ala Glu Thr					
2667		2930		2935		2940
2668	Pro Leu Thr Ala Val Val His Thr Ala Gly Ala Leu Asp Asp Gly Ile					
2669		2945		2950		2955
2670	Val Asp Thr Leu Thr Ala Glu Gln Val Arg Arg Ala His Arg Ala Lys					
2671		2965		2970		2975

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2672 Ala Val Gly Ala Ser Val Leu Asp Glu Leu Thr Arg Asp Leu Asp Leu
2673           2980           2985           2990
2674 Asp Ala Phe Val Leu Phe Ser Ser Val Ser Ser Thr Leu Gly Ile Pro
2675           2995           3000           3005
2676 Gly Gln Gly Asn Tyr Ala Pro His Asn Ala Tyr Leu Asp Ala Leu Ala
2677           3010           3015           3020
2678 Ala Arg Arg Arg Ala Thr Gly Arg Ser Ala Val Ser Val Ala Trp Gly
2679           3025           3030           3035           3040
2680 Pro Trp Asp Gly Gly Gly Met Ala Ala Gly Asp Gly Val Ala Glu Arg
2681           3045           3050           3055
2682 Leu Arg Asn His Gly Val Pro Gly Met Asp Pro Glu Leu Ala Leu Ala
2683           3060           3065           3070
2684 Ala Leu Glu Ser Ala Leu Gly Arg Asp Glu Thr Ala Ile Thr Val Ala
2685           3075           3080           3085
2686 Asp Ile Asp Trp Asp Arg Phe Tyr Leu Ala Tyr Ser Ser Gly Arg Pro
2687           3090           3095           3100
2688 Gln Pro Leu Val Glu Glu Leu Pro Glu Val Arg Arg Ile Ile Asp Ala
2689           3105           3110           3115           3120
2690 Arg Asp Ser Ala Thr Ser Gly Gln Gly Gly Ser Ser Ala Gln Gly Ala
2691           3125           3130           3135
2692 Asn Pro Leu Ala Glu Arg Leu Ala Ala Ala Pro Gly Glu Arg Thr
2693           3140           3145           3150
2694 Glu Ile Leu Leu Gly Leu Val Arg Ala Gln Ala Ala Ala Val Leu Arg
2695           3155           3160           3165
2696 Met Arg Ser Pro Glu Asp Val Ala Ala Asp Arg Ala Phe Lys Asp Ile
2697           3170           3175           3180
2698 Gly Phe Asp Ser Leu Ala Gly Val Glu Leu Arg Asn Arg Leu Thr Arg
2699           3185           3190           3195           3200
2700 Ala Thr Gly Leu Gln Leu Pro Ala Thr Leu Val Phe Asp His Pro Thr
2701           3205           3210           3215
2702 Pro Leu Ala Leu Val Ser Leu Leu Arg Ser Glu Phe Leu Gly Asp Glu
2703           3220           3225           3230
2704 Glu Thr Ala Asp Ala Arg Arg Ser Ala Ala Leu Pro Ala Thr Val Gly
2705           3235           3240           3245
2706 Ala Gly Ala Gly Ala Gly Ala Gly Thr Asp Ala Asp Asp Asp Pro Ile
2707           3250           3255           3260
2708 Ala Ile Val Ala Met Ser Cys Arg Tyr Pro Gly Asp Ile Arg Ser Pro
2709           3265           3270           3275           3280
2710 Glu Asp Leu Trp Arg Met Leu Ser Glu Gly Gly Glu Gly Ile Thr Pro
2711           3285           3290           3295
2712 Phe Pro Thr Asp Arg Gly Trp Asp Leu Asp Gly Leu Tyr Asp Ala Asp
2713           3300           3305           3310
2714 Pro Asp Ala Leu Gly Arg Ala Tyr Val Arg Glu Gly Gly Phe Leu His
2715           3315           3320           3325
2716 Asp Ala Ala Glu Phe Asp Ala Glu Phe Phe Gly Val Ser Pro Arg Glu
2717           3330           3335           3340
2718 Ala Leu Ala Met Asp Pro Gln Gln Arg Met Leu Leu Thr Thr Ser Trp
2719           3345           3350           3355           3360
2720 Glu Ala Phe Glu Arg Ala Gly Ile Glu Pro Ala Ser Leu Arg Gly Ser

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2721          3365          3370          3375
2722 Ser Thr Gly Val Phe Ile Gly Leu Ser Tyr Gln Asp Tyr Ala Ala Arg
2723          3380          3385          3390
2724 Val Pro Asn Ala Pro Arg Gly Val Glu Gly Tyr Leu Leu Thr Gly Ser
2725          3395          3400          3405
2726 Thr Pro Ser Val Ala Ser Gly Arg Ile Ala Tyr Thr Phe Gly Leu Glu
2727          3410          3415          3420
2728 Gly Pro Ala Thr Thr Val Asp Thr Ala Cys Ser Ser Ser Leu Thr Ala
2729          3425          3430          3435          3440
2730 Leu His Leu Ala Val Arg Ala Leu Arg Ser Gly Glu Cys Thr Met Ala
2731          3445          3450          3455
2732 Leu Ala Gly Gly Val Ala Met Met Ala Thr Pro His Met Phe Val Glu
2733          3460          3465          3470
2734 Phe Ser Arg Gln Arg Ala Leu Ala Pro Asp Gly Arg Ser Lys Ala Phe
2735          3475          3480          3485
2736 Ser Ala Asp Ala Asp Gly Phe Gly Ala Ala Glu Gly Val Gly Leu Leu
2737          3490          3495          3500
2738 Leu Val Glu Arg Leu Ser Asp Ala Arg Arg Asn Gly His Pro Val Leu
2739          3505          3510          3515          3520
2740 Ala Val Val Arg Gly Thr Ala Val Asn Gln Asp Gly Ala Ser Asn Gly
2741          3525          3530          3535
2742 Leu Thr Ala Pro Asn Gly Pro Ser Gln Gln Arg Val Ile Arg Gln Ala
2743          3540          3545          3550
2744 Leu Ala Asp Ala Arg Leu Ala Pro Gly Asp Ile Asp Ala Val Glu Thr
2745          3555          3560          3565
2746 His Gly Thr Gly Thr Ser Leu Gly Asp Pro Ile Glu Ala Gln Gly Leu
2747          3570          3575          3580
2748 Gln Ala Thr Tyr Gly Lys Glu Arg Pro Ala Glu Arg Pro Leu Ala Ile
2749          3585          3590          3595          3600
2750 Gly Ser Val Lys Ser Asn Ile Gly His Thr Gln Ala Ala Ala Gly Ala
2751          3605          3610          3615
2752 Ala Gly Ile Ile Lys Met Val Leu Ala Met Arg His Gly Thr Leu Pro
2753          3620          3625          3630
2754 Lys Thr Leu His Ala Asp Glu Pro Ser Pro His Val Asp Trp Ala Asn
2755          3635          3640          3645
2756 Ser Gly Leu Ala Leu Val Thr Glu Pro Ile Asp Trp Pro Ala Gly Thr
2757          3650          3655          3660
2758 Gly Pro Arg Arg Ala Ala Val Ser Ser Phe Gly Ile Ser Gly Thr Asn
2759          3665          3670          3675          3680
2760 Ala His Val Val Leu Glu Gln Ala Pro Asp Ala Ala Gly Glu Val Leu
2761          3685          3690          3695
2762 Gly Ala Asp Glu Val Pro Glu Val Ser Glu Thr Val Ala Met Ala Gly
2763          3700          3705          3710
2764 Thr Ala Gly Thr Ser Glu Val Ala Glu Gly Ser Glu Ala Ser Glu Ala
2765          3715          3720          3725
2766 Pro Ala Ala Pro Gly Ser Arg Glu Ala Ser Leu Pro Gly His Leu Pro
2767          3730          3735          3740
2768 Trp Val Leu Ser Ala Lys Asp Glu Gln Ser Leu Arg Gly Gln Ala Ala
2769          3745          3750          3755          3760

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2770  Ala Leu His Ala Trp Leu Ser Glu Pro Ala Ala Asp Leu Ser Asp Ala
2771              3765              3770              3775
2772  Asp Gly Pro Ala Arg Leu Arg Asp Val Gly Tyr Thr Leu Ala Thr Ser
2773              3780              3785              3790
2774  Arg Thr Ala Phe Ala His Arg Ala Ala Val Thr Ala Ala Asp Arg Asp
2775              3795              3800              3805
2776  Gly Phe Leu Asp Gly Leu Ala Thr Leu Ala Gln Gly Gly Thr Ser Ala
2777              3810              3815              3820
2778  His Val His Leu Asp Thr Ala Arg Asp Gly Thr Thr Ala Phe Leu Phe
2779              3825              3830              3835              3840
2780  Thr Gly Gln Gly Ser Gln Arg Pro Gly Ala Gly Arg Glu Leu Tyr Asp
2781              3845              3850              3855
2782  Arg His Pro Val Phe Ala Arg Ala Leu Asp Glu Ile Cys Ala His Leu
2783              3860              3865              3870
2784  Asp Gly His Leu Glu Leu Pro Leu Leu Asp Val Met Phe Ala Ala Glu
2785              3875              3880              3885
2786  Gly Ser Ala Glu Ala Ala Leu Leu Asp Glu Thr Arg Tyr Thr Gln Cys
2787              3890              3895              3900
2788  Ala Leu Phe Ala Leu Glu Val Ala Leu Phe Arg Leu Val Glu Ser Trp
2789              3905              3910              3915              3920
2790  Gly Met Arg Pro Ala Ala Leu Leu Gly His Ser Val Gly Glu Ile Ala
2791              3925              3930              3935
2792  Ala Ala His Val Ala Gly Val Phe Ser Leu Ala Asp Ala Ala Arg Leu
2793              3940              3945              3950
2794  Val Ala Ala Arg Gly Arg Leu Met Gln Glu Leu Pro Ala Gly Gly Ala
2795              3955              3960              3965
2796  Met Leu Ala Val Gln Ala Ala Glu Asp Glu Ile Arg Val Trp Leu Glu
2797              3970              3975              3980
2798  Thr Glu Glu Arg Tyr Ala Gly Arg Leu Asp Val Ala Ala Val Asn Gly
2799              3985              3990              3995              4000
2800  Pro Glu Ala Ala Val Leu Ser Gly Asp Ala Asp Ala Ala Arg Glu Ala
2801              4005              4010              4015
2802  Glu Ala Tyr Trp Ser Gly Leu Gly Arg Arg Thr Arg Ala Leu Arg Val
2803              4020              4025              4030
2804  Ser His Ala Phe His Ser Ala His Met Asp Gly Met Leu Asp Gly Phe
2805              4035              4040              4045
2806  Arg Ala Val Leu Glu Thr Val Glu Phe Arg Arg Pro Ser Leu Thr Val
2807              4050              4055              4060
2808  Val Ser Asn Val Thr Gly Leu Ala Ala Gly Pro Asp Asp Leu Cys Asp
2809              4065              4070              4075              4080
2810  Pro Glu Tyr Trp Val Arg His Val Arg Gly Thr Val Arg Phe Leu Asp
2811              4085              4090              4095
2812  Gly Val Arg Val Leu Arg Asp Leu Gly Val Arg Thr Cys Leu Glu Leu
2813              4100              4105              4110
2814  Gly Pro Asp Gly Val Leu Thr Ala Met Ala Ala Asp Gly Leu Ala Asp
2815              4115              4120              4125
2816  Thr Pro Ala Asp Ser Ala Ala Gly Ser Pro Val Gly Ser Pro Ala Gly
2817              4130              4135              4140
2818  Ser Pro Ala Asp Ser Ala Ala Gly Ala Leu Arg Pro Arg Pro Leu Leu

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2819      4145              4150              4155              4160
2820 Val Ala Leu Leu Arg Arg Lys Arg Ser Glu Thr Glu Thr Val Ala Asp
2821              4165              4170              4175
2822 Ala Leu Gly Arg Ala His Ala His Gly Thr Gly Pro Asp Trp His Ala
2823              4180              4185              4190
2824 Trp Phe Ala Gly Ser Gly Ala His Arg Val Asp Leu Pro Thr Tyr Ser
2825              4195              4200              4205
2826 Phe Arg Arg Asp Arg Tyr Trp Leu Asp Ala Pro Ala Ala Asp Thr Ala
2827              4210              4215              4220
2828 Val Asp Thr Ala Gly Leu Gly Leu Gly Thr Ala Asp His Pro Leu Leu
2829              4225              4230              4235              4240
2830 Gly Ala Val Val Ser Leu Pro Asp Arg Asp Gly Leu Leu Leu Thr Gly
2831              4245              4250              4255
2832 Arg Leu Ser Leu Arg Thr His Pro Trp Leu Ala Asp His Ala Val Leu
2833              4260              4265              4270
2834 Gly Ser Val Leu Leu Pro Gly Ala Ala Met Val Glu Leu Ala Ala His
2835              4275              4280              4285
2836 Ala Ala Glu Ser Ala Gly Leu Arg Asp Val Arg Glu Leu Thr Leu Leu
2837              4290              4295              4300
2838 Glu Pro Leu Val Leu Pro Glu His Gly Gly Val Glu Leu Arg Val Thr
2839              4305              4310              4315              4320
2840 Val Gly Ala Pro Ala Gly Glu Pro Gly Gly Glu Ser Ala Gly Asp Gly
2841              4325              4330              4335
2842 Ala Arg Pro Val Ser Leu His Ser Arg Leu Ala Asp Ala Pro Ala Gly
2843              4340              4345              4350
2844 Thr Ala Trp Ser Cys His Ala Thr Gly Leu Leu Ala Thr Asp Arg Pro
2845              4355              4360              4365
2846 Glu Leu Pro Val Ala Pro Asp Arg Ala Ala Met Trp Pro Pro Gln Gly
2847              4370              4375              4380
2848 Ala Glu Glu Val Pro Leu Asp Gly Leu Tyr Glu Arg Leu Asp Gly Asn
2849              4385              4390              4395              4400
2850 Gly Leu Ala Phe Gly Pro Leu Phe Gln Gly Leu Asn Ala Val Trp Arg
2851              4405              4410              4415
2852 Tyr Glu Gly Glu Val Phe Ala Asp Ile Ala Leu Pro Ala Thr Thr Asn
2853              4420              4425              4430
2854 Ala Thr Ala Pro Ala Thr Ala Asn Gly Gly Gly Ser Ala Ala Ala Ala
2855              4435              4440              4445
2856 Pro Tyr Gly Ile His Pro Ala Leu Leu Asp Ala Ser Leu His Ala Ile
2857              4450              4455              4460
2858 Ala Val Gly Gly Leu Val Asp Glu Pro Glu Leu Val Arg Val Pro Phe
2859              4465              4470              4475              4480
2860 His Trp Ser Gly Val Thr Val His Ala Ala Gly Ala Ala Ala Ala Arg
2861              4485              4490              4495
2862 Val Arg Leu Ala Ser Ala Gly Thr Asp Ala Val Ser Leu Ser Leu Thr
2863              4500              4505              4510
2864 Asp Gly Glu Gly Arg Pro Leu Val Ser Val Glu Arg Leu Thr Leu Arg
2865              4515              4520              4525
2866 Pro Val Thr Ala Asp Gln Ala Ala Ala Ser Arg Val Gly Gly Leu Met
2867              4530              4535              4540

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2868 His Arg Val Ala Trp Arg Pro Tyr Ala Leu Ala Ser Ser Gly Glu Gln
2869 4545 4550 4555 4560
2870 Asp Pro His Ala Thr Ser Tyr Gly Pro Thr Ala Val Leu Gly Lys Asp
2871 4565 4570 4575
2872 Glu Leu Lys Val Ala Ala Ala Leu Glu Ser Ala Gly Val Glu Val Gly
2873 4580 4585 4590
2874 Leu Tyr Pro Asp Leu Ala Ala Leu Ser Gln Asp Val Ala Ala Gly Ala
2875 4595 4600 4605
2876 Pro Ala Pro Arg Thr Val Leu Ala Pro Leu Pro Ala Gly Pro Ala Asp
2877 4610 4615 4620
2878 Gly Gly Ala Glu Gly Val Arg Gly Thr Val Ala Arg Thr Leu Glu Leu
2879 4625 4630 4635 4640
2880 Leu Gln Ala Trp Leu Ala Asp Glu His Leu Ala Gly Thr Arg Leu Leu
2881 4645 4650 4655
2882 Leu Val Thr Arg Gly Ala Val Arg Asp Pro Glu Gly Ser Gly Ala Asp
2883 4660 4665 4670
2884 Asp Gly Gly Glu Asp Leu Ser His Ala Ala Ala Trp Gly Leu Val Arg
2885 4675 4680 4685
2886 Thr Ala Gln Thr Glu Asn Pro Gly Arg Phe Gly Leu Leu Asp Leu Ala
2887 4690 4695 4700
2888 Asp Asp Ala Ser Ser Tyr Arg Thr Leu Pro Ser Val Leu Ser Asp Ala
2889 4705 4710 4715 4720
2890 Gly Leu Arg Asp Glu Pro Gln Leu Ala Leu His Asp Gly Thr Ile Arg
2891 4725 4730 4735
2892 Leu Ala Arg Leu Ala Ser Val Arg Pro Glu Thr Gly Thr Ala Ala Pro
2893 4740 4745 4750
2894 Ala Leu Ala Pro Glu Gly Thr Val Leu Leu Thr Gly Gly Thr Gly Gly
2895 4755 4760 4765
2896 Leu Gly Gly Leu Val Ala Arg His Val Val Gly Glu Trp Gly Val Arg
2897 4770 4775 4780
2898 Arg Leu Leu Leu Val Ser Arg Arg Gly Thr Asp Ala Pro Gly Ala Asp
2899 4785 4790 4795 4800
2900 Glu Leu Val His Glu Leu Glu Ala Leu Gly Ala Asp Val Ser Val Ala
2901 4805 4810 4815
2902 Ala Cys Asp Val Ala Asp Arg Glu Ala Leu Thr Ala Val Leu Asp Ala
2903 4820 4825 4830
2904 Ile Pro Ala Glu His Pro Leu Thr Ala Val Val His Thr Ala Gly Val
2905 4835 4840 4845
2906 Leu Ser Asp Gly Thr Leu Pro Ser Met Thr Thr Glu Asp Val Glu His
2907 4850 4855 4860
2908 Val Leu Arg Pro Lys Val Asp Ala Ala Phe Leu Leu Asp Glu Leu Thr
2909 4865 4870 4875 4880
2910 Ser Thr Pro Ala Tyr Asp Leu Ala Ala Phe Val Met Phe Ser Ser Ala
2911 4885 4890 4895
2912 Ala Ala Val Phe Gly Gly Ala Gly Gln Gly Ala Tyr Ala Ala Ala Asn
2913 4900 4905 4910
2914 Ala Thr Leu Asp Ala Leu Ala Trp Arg Arg Arg Ala Ala Gly Leu Pro
2915 4915 4920 4925
2916 Ala Leu Ser Leu Gly Trp Gly Leu Trp Ala Glu Thr Ser Gly Met Thr

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

2917	4930	4935	4940
2918	Gly Glu Leu Gly Gln Ala Asp Leu Arg Arg Met Ser Arg Ala Gly Ile		
2919	4945	4950	4955 4960
2920	Gly Gly Ile Ser Asp Ala Glu Gly Ile Ala Leu Leu Asp Ala Ala Leu		
2921	4965	4970	4975
2922	Arg Asp Asp Arg His Pro Val Leu Leu Pro Leu Arg Leu Asp Ala Ala		
2923	4980	4985	4990
2924	Gly Leu Arg Asp Ala Ala Gly Asn Asp Pro Ala Gly Ile Pro Ala Leu		
2925	4995	5000	5005
2926	Phe Arg Asp Val Val Gly Ala Arg Thr Val Arg Ala Arg Pro Ser Ala		
2927	5010	5015	5020
2928	Ala Ser Ala Ser Thr Thr Ala Gly Thr Ala Gly Thr Pro Gly Thr Ala		
2929	5025	5030	5035 5040
2930	Asp Gly Ala Ala Glu Thr Ala Ala Val Thr Leu Ala Asp Arg Ala Ala		
2931	5045	5050	5055
2932	Thr Val Asp Gly Pro Ala Arg Gln Arg Leu Leu Leu Glu Phe Val Val		
2933	5060	5065	5070
2934	Gly Glu Val Ala Glu Val Leu Gly His Ala Arg Gly His Arg Ile Asp		
2935	5075	5080	5085
2936	Ala Glu Arg Gly Phe Leu Asp Leu Gly Phe Asp Ser Leu Thr Ala Val		
2937	5090	5095	5100
2938	Glu Leu Arg Asn Arg Leu Asn Ser Ala Gly Gly Leu Ala Leu Pro Ala		
2939	5105	5110	5115 5120
2940	Thr Leu Val Phe Asp His Pro Ser Pro Ala Ala Leu Ala Ser His Leu		
2941	5125	5130	5135
2942	Asp Ala Glu Leu Pro Arg Gly Ala Ser Asp Gln Asp Gly Ala Gly Asn		
2943	5140	5145	5150
2944	Arg Asn Gly Asn Glu Asn Gly Thr Thr Ala Ser Arg Ser Thr Ala Glu		
2945	5155	5160	5165
2946	Thr Asp Ala Leu Leu Ala Gln Leu Thr Arg Leu Glu Gly Ala Leu Val		
2947	5170	5175	5180
2948	Leu Thr Gly Leu Ser Asp Ala Pro Gly Ser Glu Glu Val Leu Glu His		
2949	5185	5190	5195 5200
2950	Leu Arg Ser Leu Arg Ser Met Val Thr Gly Glu Thr Gly Thr Gly Thr		
2951	5205	5210	5215
2952	Ala Ser Gly Ala Pro Asp Gly Ala Gly Ser Gly Ala Glu Asp Arg Pro		
2953	5220	5225	5230
2954	Trp Ala Ala Gly Asp Gly Ala Gly Gly Ser Glu Asp Gly Ala Gly		
2955	5235	5240	5245
2956	Val Pro Asp Phe Met Asn Ala Ser Ala Glu Glu Leu Phe Gly Leu Leu		
2957	5250	5255	5260
2958	Asp Gln Asp Pro Ser Thr Asp Met Ser Thr Val Asn Glu Glu Lys Tyr		
2959	5265	5270	5275 5280
2960	Leu Asp Tyr Leu Arg Arg Ala Thr Ala Asp Leu His Glu Ala Arg Gly		
2961	5285	5290	5295
2962	Arg Leu Arg Glu Leu Glu Ala Lys Ala Gly Glu Pro Val Ala Ile Val		
2963	5300	5305	5310
2964	Gly Met Ala Cys Arg Leu Pro Gly Gly Val Ala Ser Pro Glu Asp Leu		
2965	5315	5320	5325



## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

2966 Trp Arg Leu Val Ala Gly Gly Glu Asp Ala Ile Ser Glu Phe Pro Gln
2967      5330      5335      5340
2968 Asp Arg Gly Trp Asp Val Glu Gly Leu Tyr Asp Pro Asn Pro Glu Ala
2969      5345      5350      5355      5360
2970 Thr Gly Lys Ser Tyr Ala Arg Glu Ala Gly Phe Leu Tyr Glu Ala Gly
2971      5365      5370      5375
2972 Glu Phe Asp Ala Asp Phe Phe Gly Ile Ser Pro Arg Glu Ala Leu Ala
2973      5380      5385      5390
2974 Met Asp Pro Gln Gln Arg Leu Leu Glu Ala Ser Trp Glu Ala Phe
2975      5395      5400      5405
2976 Glu His Ala Gly Ile Pro Ala Ala Thr Ala Arg Gly Thr Ser Val Gly
2977      5410      5415      5420
2978 Val Phe Thr Gly Val Met Tyr His Asp Tyr Ala Thr Arg Leu Thr Asp
2979      5425      5430      5435      5440
2980 Val Pro Glu Gly Ile Glu Gly Tyr Leu Gly Thr Gly Asn Ser Gly Ser
2981      5445      5450      5455
2982 Val Ala Ser Gly Arg Val Ala Tyr Thr Leu Gly Leu Glu Gly Pro Ala
2983      5460      5465      5470
2984 Val Thr Val Asp Thr Ala Cys Ser Ser Ser Leu Val Ala Leu His Leu
2985      5475      5480      5485
2986 Ala Val Gln Ala Leu Arg Lys Gly Glu Val Asp Met Ala Leu Ala Gly
2987      5490      5495      5500
2988 Gly Val Thr Val Met Ser Thr Pro Ser Thr Phe Val Glu Phe Ser Arg
2989      5505      5510      5515      5520
2990 Gln Arg Gly Leu Ala Pro Asp Gly Arg Ser Lys Ser Phe Ser Ser Thr
2991      5525      5530      5535
2992 Ala Asp Gly Thr Ser Trp Ser Glu Gly Val Gly Val Leu Leu Val Glu
2993      5540      5545      5550
2994 Arg Leu Ser Asp Ala Arg Arg Lys Gly His Arg Ile Leu Ala Val Val
2995      5555      5560      5565
2996 Arg Gly Thr Ala Val Asn Gln Asp Gly Ala Ser Ser Gly Leu Thr Ala
2997      5570      5575      5580
2998 Pro Asn Gly Pro Ser Gln Gln Arg Val Ile Arg Arg Ala Leu Ala Asp
2999      5585      5590      5595      5600
3000 Ala Arg Leu Thr Thr Ser Asp Val Asp Val Val Glu Ala His Gly Thr
3001      5605      5610      5615
3002 Gly Thr Arg Leu Gly Asp Pro Ile Glu Ala Gln Ala Val Ile Ala Thr
3003      5620      5625      5630
3004 Tyr Gly Gln Gly Arg Asp Gly Glu Gln Pro Leu Arg Leu Gly Ser Leu
3005      5635      5640      5645
3006 Lys Ser Asn Ile Gly His Thr Gln Ala Ala Ala Gly Val Ser Gly Val
3007      5650      5655      5660
3008 Ile Lys Met Val Gln Ala Met Arg His Gly Val Leu Pro Lys Thr Leu
3009      5665      5670      5675      5680
3010 His Val Glu Lys Pro Thr Asp Gln Val Asp Trp Ser Ala Gly Ala Val
3011      5685      5690      5695
3012 Glu Leu Leu Thr Glu Ala Met Asp Trp Pro Asp Lys Gly Asp Gly Gly
3013      5700      5705      5710
3014 Leu Arg Arg Ala Ala Val Ser Ser Phe Gly Val Ser Gly Thr Asn Ala

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

3015		5715		5720		5725	
3016	His	Val	Val	Leu	Glu	Glu	Ala
3017		5730		5735		5740	
3018	Glu	Ala	Thr	Pro	Ala	Val	Glu
3019	5745		5750		5755		5760
3020	Trp	Leu	Val	Ser	Ala	Lys	Thr
3021		5765		5770		5775	
3022	Arg	Leu	Ala	Ala	Phe	Ala	Ser
3023		5780		5785		5790	
3024	Gly	Ala	Val	Ala	Arg	Val	Leu
3025		5795		5800		5805	
3026	Arg	Ala	Val	Val	Leu	Gly	Thr
3027		5810		5815		5820	
3028	Thr	Ala	Pro	Glu	Gly	Leu	Ile
3029	5825		5830		5835		5840
3030	Val	Ala	Phe	Val	Phe	Pro	Gly
3031		5845		5850		5855	
3032	Ala	Glu	Leu	Leu	Asp	Val	Ser
3033		5860		5865		5870	
3034	Cys	Glu	Ser	Ala	Leu	Ser	Arg
3035		5875		5880		5885	
3036	Val	Arg	Gln	Ala	Pro	Gly	Ala
3037		5890		5895		5900	
3038	Gln	Pro	Val	Thr	Phe	Ala	Val
3039	5905		5910		5915		5920
3040	His	His	Gly	Val	Thr	Pro	Gln
3041		5925		5930		5935	
3042	Ile	Ala	Ala	Ala	Tyr	Val	Ala
3043		5940		5945		5950	
3044	Arg	Val	Val	Thr	Leu	Arg	Ser
3045		5955		5960		5965	
3046	Lys	Gly	Gly	Met	Ile	Ser	Leu
3047		5970		5975		5980	
3048	Arg	Ile	Glu	Asn	Leu	His	Gly
3049	5985		5990		5995		6000
3050	Thr	Ala	Thr	Val	Val	Ser	Gly
3051		6005		6010		6015	
3052	Gln	Ala	Cys	Glu	Ala	Asp	Gly
3053		6020		6025		6030	
3054	Tyr	Ala	Ser	His	Ser	Ala	His
3055		6035		6040		6045	
3056	Glu	Val	Leu	Ala	Gly	Leu	Ser
3057		6050		6055		6060	
3058	Ser	Thr	Leu	Glu	Gly	Ala	Trp
3059	6065		6070		6075		6080
3060	Tyr	Trp	Tyr	Arg	Asn	Leu	Arg
3061		6085		6090		6095	
3062	Glu	Thr	Leu	Ala	Thr	Asp	Glu
3063		6100		6105		6110	

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3064 Ala His Pro Val Leu Thr Met Thr Leu Pro Glu Thr Val Thr Gly Leu
3065           6115           6120           6125
3066 Gly Thr Leu Arg Arg Glu Gln Gly Gly Gln Glu Arg Leu Val Thr Ser
3067           6130           6135           6140
3068 Leu Ala Glu Ala Trp Thr Asn Gly Leu Thr Ile Asp Trp Ala Pro Val
3069           6145           6150           6155           6160
3070 Leu Pro Thr Ala Thr Gly His His Pro Glu Leu Pro Thr Tyr Ala Phe
3071           6165           6170           6175
3072 Gln Arg Arg His Tyr Trp Leu His Asp Ser Pro Ala Val Gln Gly Ser
3073           6180           6185           6190
3074 Val Gln Asp Ser Trp Arg Tyr Arg Ile Asp Trp Lys Arg Leu Ala Val
3075           6195           6200           6205
3076 Ala Asp Ala Ser Glu Arg Ala Gly Leu Ser Gly Arg Trp Leu Val Val
3077           6210           6215           6220
3078 Val Pro Glu Asp Arg Ser Ala Glu Ala Ala Pro Val Leu Ala Ala Leu
3079           6225           6230           6235           6240
3080 Ser Gly Ala Gly Ala Asp Pro Val Gln Leu Asp Val Ser Pro Leu Gly
3081           6245           6250           6255
3082 Asp Arg Gln Arg Leu Ala Ala Thr Leu Gly Glu Ala Leu Ala Ala Ala
3083           6260           6265           6270
3084 Gly Gly Ala Val Asp Gly Val Leu Ser Leu Leu Ala Trp Asp Glu Ser
3085           6275           6280           6285
3086 Ala His Pro Gly His Pro Ala Pro Phe Thr Arg Gly Thr Gly Ala Thr
3087           6290           6295           6300
3088 Leu Thr Leu Val Gln Ala Leu Glu Asp Ala Gly Val Ala Ala Pro Leu
3089           6305           6310           6315           6320
3090 Trp Cys Val Thr His Gly Ala Val Ser Val Gly Arg Ala Asp His Val
3091           6325           6330           6335
3092 Thr Ser Pro Ala Gln Ala Met Val Trp Gly Met Gly Arg Val Ala Ala
3093           6340           6345           6350
3094 Leu Glu His Pro Glu Arg Trp Gly Gly Leu Ile Asp Leu Pro Ser Asp
3095           6355           6360           6365
3096 Ala Asp Arg Ala Ala Leu Asp Arg Met Thr Thr Val Leu Ala Gly Gly
3097           6370           6375           6380
3098 Thr Gly Glu Asp Gln Val Ala Val Arg Ala Ser Gly Leu Leu Ala Arg
3099           6385           6390           6395           6400
3100 Arg Leu Val Arg Ala Ser Leu Pro Ala His Gly Thr Ala Ser Pro Trp
3101           6405           6410           6415
3102 Trp Gln Ala Asp Gly Thr Val Leu Val Thr Gly Ala Glu Glu Pro Ala
3103           6420           6425           6430
3104 Ala Ala Glu Ala Ala Arg Arg Leu Ala Arg Asp Gly Ala Gly His Leu
3105           6435           6440           6445
3106 Leu Leu His Thr Thr Pro Ser Gly Ser Glu Gly Ala Glu Gly Thr Ser
3107           6450           6455           6460
3108 Gly Ala Ala Glu Asp Ser Gly Leu Ala Gly Leu Val Ala Glu Leu Ala
3109           6465           6470           6475           6480
3110 Asp Leu Gly Ala Thr Ala Thr Val Val Thr Cys Asp Leu Thr Asp Ala
3111           6485           6490           6495
3112 Glu Ala Ala Ala Arg Leu Leu Ala Gly Val Ser Asp Ala His Pro Leu

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

3113		6500		6505		6510	
3114	Ser	Ala	Val	Leu	His	Leu	Pro
3115		6515		6520		6525	
3116	Ala	Thr	Asp	Ala	Asp	Ala	Leu
3117		6530		6535		6540	
3118	Ala	Ala	Leu	His	Leu	Asp	Arg
3119		6545		6550		6555	
3120	Gly	Arg	Pro	Pro	Val	Leu	Phe
3121		6565		6570		6575	
3122	Gly	Gly	Ala	Gly	Gln	Gly	Ala
3123		6580		6585		6590	
3124	Ala	Leu	Ala	Gly	Gln	His	Arg
3125		6595		6600		6605	
3126	Ala	Trp	Ser	Pro	Trp	Glu	Gly
3127		6610		6615		6620	
3128	Glu	Arg	Leu	Arg	Arg	Leu	Gly
3129		6625		6630		6635	
3130	Leu	Thr	Ala	Leu	Asp	Thr	Ala
3131		6645		6650		6655	
3132	Ile	Ala	Asp	Val	Asp	Trp	Ser
3133		6660		6665		6670	
3134	Arg	Pro	Gly	Thr	Leu	Leu	Ala
3135		6675		6680		6685	
3136	Asp	Glu	Gln	Gln	Ser	Thr	Thr
3137		6690		6695		6700	
3138	Glu	Leu	Gly	Ala	Leu	Thr	Gly
3139		6705		6710		6715	
3140	Leu	Val	Arg	Glu	His	Leu	Ala
3141		6725		6730		6735	
3142	Ala	Val	Asp	Thr	Gly	Arg	Ala
3143		6740		6745		6750	
3144	Thr	Ala	Val	Glu	Leu	Arg	Asn
3145		6755		6760		6765	
3146	Leu	Pro	Ala	Thr	Leu	Val	Phe
3147		6770		6775		6780	
3148	Glu	Phe	Leu	Leu	Ala	Glu	Ile
3149		6785		6790		6795	
3150	Gln	Leu	Pro	Val	Asp	Gly	Gly
3151		6805		6810		6815	
3152	Gly	Met	Ala	Cys	Arg	Leu	Pro
3153		6820		6825		6830	
3154	Trp	Arg	Leu	Val	Ala	Gly	Gly
3155		6835		6840		6845	
3156	Asp	Arg	Gly	Trp	Asp	Val	Glu
3157		6850		6855		6860	
3158	Ser	Gly	Arg	Thr	Tyr	Cys	Arg
3159		6865		6870		6875	
3160	Glu	Phe	Asp	Ala	Asp	Phe	Phe
3161		6885		6890		6895	

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3162 Met Asp Pro Gln Gln Arg Leu Leu Leu Glu Thr Ser Trp Glu Ala Val
3163           6900           6905           6910
3164 Glu Asp Ala Gly Ile Asp Pro Thr Ser Leu Gln Gly Gln Gln Val Gly
3165           6915           6920           6925
3166 Val Phe Ala Gly Thr Asn Gly Pro His Tyr Glu Pro Leu Leu Arg Asn
3167           6930           6935           6940
3168 Thr Ala Glu Asp Leu Glu Gly Tyr Val Gly Thr Gly Asn Ala Ala Ser
3169           6945           6950           6955           6960
3170 Ile Met Ser Gly Arg Val Ser Tyr Thr Leu Gly Leu Glu Gly Pro Ala
3171           6965           6970           6975
3172 Val Thr Val Asp Thr Ala Cys Ser Ser Ser Leu Val Ala Leu His Leu
3173           6980           6985           6990
3174 Ala Val Gln Ala Leu Arg Lys Gly Glu Cys Gly Leu Ala Leu Ala Gly
3175           6995           7000           7005
3176 Gly Val Thr Val Met Ser Thr Pro Thr Thr Phe Val Glu Phe Ser Arg
3177           7010           7015           7020
3178 Gln Arg Gly Leu Ala Glu Asp Gly Arg Ser Lys Ala Phe Ala Ala Ser
3179           7025           7030           7035           7040
3180 Ala Asp Gly Phe Gly Pro Ala Glu Gly Val Gly Met Leu Leu Val Glu
3181           7045           7050           7055
3182 Arg Leu Ser Asp Ala Arg Arg Asn Gly His Arg Val Leu Ala Val Val
3183           7060           7065           7070
3184 Arg Gly Ser Ala Val Asn Gln Asp Gly Ala Ser Asn Gly Leu Thr Ala
3185           7075           7080           7085
3186 Pro Asn Gly Pro Ser Gln Gln Arg Val Ile Arg Arg Ala Leu Ala Asp
3187           7090           7095           7100
3188 Ala Arg Leu Thr Thr Ala Asp Val Asp Val Val Glu Ala His Gly Thr
3189           7105           7110           7115           7120
3190 Gly Thr Arg Leu Gly Asp Pro Ile Glu Ala Gln Ala Leu Ile Ala Thr
3191           7125           7130           7135
3192 Tyr Gly Gln Gly Arg Asp Thr Glu Gln Pro Leu Arg Leu Gly Ser Leu
3193           7140           7145           7150
3194 Lys Ser Asn Ile Gly His Thr Gln Ala Ala Ala Gly Val Ser Gly Ile
3195           7155           7160           7165
3196 Ile Lys Met Val Gln Ala Met Arg His Gly Val Leu Pro Lys Thr Leu
3197           7170           7175           7180
3198 His Val Asp Arg Pro Ser Asp Gln Ile Asp Trp Ser Ala Gly Thr Val
3199           7185           7190           7195           7200
3200 Glu Leu Leu Thr Glu Ala Met Asp Trp Pro Arg Lys Gln Glu Gly Gly
3201           7205           7210           7215
3202 Leu Arg Arg Ala Ala Val Ser Ser Phe Gly Ile Ser Gly Thr Asn Ala
3203           7220           7225           7230
3204 His Ile Val Leu Glu Glu Ala Pro Val Asp Glu Asp Ala Pro Ala Asp
3205           7235           7240           7245
3206 Glu Pro Ser Val Gly Gly Val Val Pro Trp Leu Val Ser Ala Lys Thr
3207           7250           7255           7260
3208 Pro Ala Ala Leu Asp Ala Gln Ile Gly Arg Leu Ala Ala Phe Ala Ser
3209           7265           7270           7275           7280
3210 Gln Gly Arg Thr Asp Ala Ala Asp Pro Gly Ala Val Ala Arg Val Leu

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

3211		7285		7290		7295
3212	Ala Gly Gly Arg Ala Gln Phe Glu His Arg Ala Val Ala Leu Gly Thr					
3213		7300		7305		7310
3214	Gly Gln Asp Asp Leu Ala Ala Ala Leu Ala Ala Pro Glu Gly Leu Val					
3215		7315		7320		7325
3216	Arg Gly Val Ala Ser Gly Val Gly Arg Val Ala Phe Val Phe Pro Gly					
3217		7330		7335		7340
3218	Gln Gly Thr Gln Trp Ala Gly Met Gly Ala Glu Leu Leu Asp Val Ser					
3219		7345		7350		7355
3220	Lys Glu Phe Ala Ala Ala Met Ala Glu Cys Glu Ala Ala Leu Ala Pro					
3221		7365		7370		7375
3222	Tyr Val Asp Trp Ser Leu Glu Ala Val Val Arg Gln Ala Pro Gly Ala					
3223		7380		7385		7390
3224	Pro Thr Leu Glu Arg Val Asp Val Val Gln Pro Val Thr Phe Ala Val					
3225		7395		7400		7405
3226	Met Val Ser Leu Ala Lys Val Trp Gln His His Gly Val Thr Pro Gln					
3227		7410		7415		7420
3228	Ala Val Val Gly His Ser Gln Gly Glu Ile Ala Ala Ala Tyr Val Ala					
3229		7425		7430		7435
3230	Gly Ala Leu Ser Leu Asp Asp Ala Ala Arg Val Val Thr Leu Arg Ser					
3231		7445		7450		7455
3232	Lys Ser Ile Gly Ala His Leu Ala Gly Gln Gly Gly Met Leu Ser Leu					
3233		7460		7465		7470
3234	Ala Leu Ser Glu Ala Ala Val Val Glu Arg Leu Ala Gly Phe Asp Gly					
3235		7475		7480		7485
3236	Leu Ser Val Ala Ala Val Asn Gly Pro Thr Ala Thr Val Val Ser Gly					
3237		7490		7495		7500
3238	Asp Pro Thr Gln Ile Gln Glu Leu Ala Gln Ala Cys Glu Ala Asp Gly					
3239		7505		7510		7515
3240	Val Arg Ala Arg Ile Ile Pro Val Asp Tyr Ala Ser His Ser Ala His					
3241		7525		7530		7535
3242	Val Glu Thr Ile Glu Ser Glu Leu Ala Asp Val Leu Ala Gly Leu Ser					
3243		7540		7545		7550
3244	Pro Gln Thr Pro Gln Val Pro Phe Phe Ser Thr Leu Glu Gly Ala Trp					
3245		7555		7560		7565
3246	Ile Thr Glu Pro Ala Leu Asp Gly Gly Tyr Trp Tyr Arg Asn Leu Arg					
3247		7570		7575		7580
3248	His Arg Val Gly Phe Ala Pro Ala Val Glu Thr Leu Ala Thr Asp Glu					
3249		7585		7590		7595
3250	Gly Phe Thr His Phe Val Glu Val Ser Ala His Pro Val Leu Thr Met					
3251		7605		7610		7615
3252	Ala Leu Pro Glu Thr Val Thr Gly Leu Gly Thr Leu Arg Arg Asp Asn					
3253		7620		7625		7630
3254	Gly Gly Gln His Arg Leu Thr Thr Ser Leu Ala Glu Ala Trp Ala Asn					
3255		7635		7640		7645
3256	Gly Leu Thr Val Asp Trp Ala Ser Leu Leu Pro Thr Thr Thr Thr His					
3257		7650		7655		7660
3258	Pro Asp Leu Pro Thr Tyr Ala Phe Gln Thr Glu Arg Tyr Trp Pro Gln					
3259		7665		7670		7675
						7680

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3260 Pro Asp Leu Ser Ala Ala Gly Asp Ile Thr Ser Ala Gly Leu Gly Ala
3261              7685              7690              7695
3262 Ala Glu His Pro Leu Leu Gly Ala Ala Val Ala Leu Ala Asp Ser Asp
3263              7700              7705              7710
3264 Gly Cys Leu Leu Thr Gly Ser Leu Ser Leu Arg Thr His Pro Trp Leu
3265              7715              7720              7725
3266 Ala Asp His Ala Val Ala Gly Thr Val Leu Leu Pro Gly Thr Ala Phe
3267              7730              7735              7740
3268 Val Glu Leu Ala Phe Arg Ala Gly Asp Gln Val Gly Cys Asp Leu Val
3269              7745              7750              7755              7760
3270 Glu Glu Leu Thr Leu Asp Ala Pro Leu Val Leu Pro Arg Arg Gly Ala
3271              7765              7770              7775
3272 Val Arg Val Gln Leu Ser Val Gly Ala Ser Asp Glu Ser Gly Arg Arg
3273              7780              7785              7790
3274 Thr Phe Gly Leu Tyr Ala His Pro Glu Asp Ala Pro Gly Glu Ala Glu
3275              7795              7800              7805
3276 Trp Thr Arg His Ala Thr Gly Val Leu Ala Ala Arg Ala Asp Arg Thr
3277              7810              7815              7820
3278 Ala Pro Val Ala Asp Pro Glu Ala Trp Pro Pro Gly Ala Glu Pro
3279              7825              7830              7835              7840
3280 Val Asp Val Asp Gly Leu Tyr Glu Arg Phe Ala Ala Asn Gly Tyr Gly
3281              7845              7850              7855
3282 Tyr Gly Pro Leu Phe Gln Gly Val Arg Gly Val Trp Arg Arg Gly Asp
3283              7860              7865              7870
3284 Glu Val Phe Ala Asp Val Ala Leu Pro Ala Glu Val Ala Gly Ala Glu
3285              7875              7880              7885
3286 Gly Ala Arg Phe Gly Leu His Pro Ala Leu Leu Asp Ala Ala Val Gln
3287              7890              7895              7900
3288 Ala Ala Gly Ala Gly Arg Gly Val Arg Arg Gly His Ala Ala Ala Val
3289              7905              7910              7915              7920
3290 Arg Leu Glu Arg Asp Leu Leu Tyr Ala Val Gly Ala Thr Ala Leu Arg
3291              7925              7930              7935
3292 Val Arg Leu Ala Pro Ala Gly Pro Asp Thr Val Ser Val Ser Ala Ala
3293              7940              7945              7950
3294 Asp Ser Ser Gly Gln Pro Val Phe Ala Ala Asp Ser Leu Thr Val Leu
3295              7955              7960              7965
3296 Pro Val Asp Pro Ala Gln Leu Ala Ala Phe Ser Asp Pro Thr Leu Asp
3297              7970              7975              7980
3298 Ala Leu His Leu Leu Glu Trp Thr Ala Trp Asp Gly Ala Ala Gln Ala
3299              7985              7990              7995              8000
3300 Leu Pro Gly Ala Val Val Leu Gly Gly Asp Ala Asp Gly Leu Ala Ala
3301              8005              8010              8015
3302 Ala Leu Arg Ala Gly Gly Thr Glu Val Leu Ser Phe Pro Asp Leu Thr
3303              8020              8025              8030
3304 Asp Leu Val Glu Ala Val Asp Arg Gly Glu Thr Pro Ala Pro Ala Thr
3305              8035              8040              8045
3306 Val Leu Val Ala Cys Pro Ala Ala Gly Pro Asp Gly Pro Glu His Val
3307              8050              8055              8060
3308 Arg Glu Ala Leu His Gly Ser Leu Ala Leu Met Gln Ala Trp Leu Ala

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

3309	8065	8070	8075	8080
3310	Asp Glu Arg Phe Thr Asp Gly Arg Leu Val Leu Val Thr Arg Asp Ala			
3311	8085	8090	8095	
3312	Val Ala Ala Arg Ser Gly Asp Gly Leu Arg Ser Thr Gly Gln Ala Ala			
3313	8100	8105	8110	
3314	Val Trp Gly Leu Gly Arg Ser Ala Gln Thr Glu Ser Pro Gly Arg Phe			
3315	8115	8120	8125	
3316	Val Leu Leu Asp Leu Ala Gly Glu Ala Arg Thr Ala Gly Asp Ala Thr			
3317	8130	8135	8140	
3318	Ala Gly Asp Gly Leu Thr Thr Gly Asp Ala Thr Val Gly Gly Thr Ser			
3319	8145	8150	8155	8160
3320	Gly Asp Ala Ala Leu Gly Ser Ala Leu Ala Thr Ala Leu Gly Ser Gly			
3321	8165	8170	8175	
3322	Glu Pro Gln Leu Ala Leu Arg Asp Gly Ala Leu Leu Val Pro Arg Leu			
3323	8180	8185	8190	
3324	Ala Arg Ala Ala Ala Pro Ala Ala Asp Gly Leu Ala Ala Ala Asp			
3325	8195	8200	8205	
3326	Gly Leu Ala Ala Leu Pro Leu Pro Ala Ala Pro Ala Leu Trp Arg Leu			
3327	8210	8215	8220	
3328	Glu Pro Gly Thr Asp Gly Ser Leu Glu Ser Leu Thr Ala Ala Pro Gly			
3329	8225	8230	8235	8240
3330	Asp Ala Glu Thr Leu Ala Pro Glu Pro Leu Gly Pro Gly Gln Val Arg			
3331	8245	8250	8255	
3332	Ile Ala Ile Arg Ala Thr Gly Leu Asn Phe Arg Asp Val Leu Ile Ala			
3333	8260	8265	8270	
3334	Leu Gly Met Tyr Pro Asp Pro Ala Leu Met Gly Thr Glu Gly Ala Gly			
3335	8275	8280	8285	
3336	Val Val Thr Ala Thr Gly Pro Gly Val Thr His Leu Ala Pro Gly Asp			
3337	8290	8295	8300	
3338	Arg Val Met Gly Leu Leu Ser Gly Ala Tyr Ala Pro Val Val Val Ala			
3339	8305	8310	8315	8320
3340	Asp Ala Arg Thr Val Ala Arg Met Pro Glu Gly Trp Thr Phe Ala Gln			
3341	8325	8330	8335	
3342	Gly Ala Ser Val Pro Val Val Phe Leu Thr Ala Val Tyr Ala Leu Arg			
3343	8340	8345	8350	
3344	Asp Leu Ala Asp Val Lys Pro Gly Glu Arg Leu Leu Val His Ser Ala			
3345	8355	8360	8365	
3346	Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu Ala Arg His Trp Gly			
3347	8370	8375	8380	
3348	Val Glu Val His Gly Thr Ala Ser His Gly Lys Trp Asp Ala Leu Arg			
3349	8385	8390	8395	8400
3350	Ala Leu Gly Leu Asp Asp Ala His Ile Ala Ser Ser Arg Thr Leu Asp			
3351	8405	8410	8415	
3352	Phe Glu Ser Ala Phe Arg Ala Ala Ser Gly Gly Ala Gly Met Asp Val			
3353	8420	8425	8430	
3354	Val Leu Asn Ser Leu Ala Arg Glu Phe Val Asp Ala Ser Leu Arg Leu			
3355	8435	8440	8445	
3356	Leu Gly Pro Gly Gly Arg Phe Val Glu Met Gly Lys Thr Asp Val Arg			
3357	8450	8455	8460	



## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3358 Asp Ala Glu Arg Val Ala Ala Asp His Pro Gly Val Gly Tyr Arg Ala
3359 8465 8470 8475 8480
3360 Phe Asp Leu Gly Glu Ala Gly Pro Glu Arg Ile Gly Glu Met Leu Ala
3361 8485 8490 8495
3362 Glu Val Ile Ala Leu Phe Glu Asp Gly Val Leu Arg His Leu Pro Val
3363 8500 8505 8510
3364 Thr Thr Trp Asp Val Arg Arg Ala Arg Asp Ala Phe Arg His Val Ser
3365 8515 8520 8525
3366 Gln Ala Arg His Thr Gly Lys Val Val Leu Thr Met Pro Ser Gly Leu
3367 8530 8535 8540
3368 Asp Pro Glu Gly Thr Val Leu Leu Thr Gly Gly Thr Gly Ala Leu Gly
3369 8545 8550 8555 8560
3370 Gly Ile Val Ala Arg His Val Val Gly Glu Trp Gly Val Arg Arg Leu
3371 8565 8570 8575
3372 Leu Leu Val Ser Arg Arg Gly Thr Asp Ala Pro Gly Ala Gly Glu Leu
3373 8580 8585 8590
3374 Val His Glu Leu Glu Ala Leu Gly Ala Asp Val Ser Val Ala Ala Cys
3375 8595 8600 8605
3376 Asp Val Ala Asp Arg Glu Ala Leu Thr Ala Val Leu Asp Ser Ile Pro
3377 8610 8615 8620
3378 Ala Glu His Pro Leu Thr Ala Val Val His Thr Ala Gly Val Leu Ser
3379 8625 8630 8635 8640
3380 Asp Gly Thr Leu Pro Ser Met Thr Ala Glu Asp Val Glu His Val Leu
3381 8645 8650 8655
3382 Arg Pro Lys Val Asp Ala Ala Phe Leu Leu Asp Glu Leu Thr Ser Thr
3383 8660 8665 8670
3384 Pro Gly Tyr Asp Leu Ala Ala Phe Val Met Phe Ser Ser Ala Ala Ala
3385 8675 8680 8685
3386 Val Phe Gly Gly Ala Gly Gln Gly Ala Tyr Ala Ala Ala Asn Ala Thr
3387 8690 8695 8700
3388 Leu Asp Ala Leu Ala Trp Arg Arg Arg Thr Ala Gly Leu Pro Ala Leu
3389 8705 8710 8715 8720
3390 Ser Leu Gly Trp Gly Leu Trp Ala Glu Thr Ser Gly Met Thr Gly Gly
3391 8725 8730 8735
3392 Leu Ser Asp Thr Asp Arg Ser Arg Leu Ala Arg Ser Gly Ala Thr Pro
3393 8740 8745 8750
3394 Met Asp Ser Glu Leu Thr Leu Ser Leu Leu Asp Ala Ala Met Arg Arg
3395 8755 8760 8765
3396 Asp Asp Pro Ala Leu Val Pro Ile Ala Leu Asp Val Ala Ala Leu Arg
3397 8770 8775 8780
3398 Ala Gln Gln Arg Asp Gly Met Leu Ala Pro Leu Leu Ser Gly Leu Thr
3399 8785 8790 8795 8800
3400 Arg Gly Ser Arg Val Gly Gly Ala Pro Val Asn Gln Arg Arg Ala Ala
3401 8805 8810 8815
3402 Ala Gly Gly Ala Gly Glu Ala Asp Thr Asp Leu Gly Gly Arg Leu Ala
3403 8820 8825 8830
3404 Ala Met Thr Pro Asp Asp Arg Val Ala His Leu Arg Asp Leu Val Arg
3405 8835 8840 8845
3406 Thr His Val Ala Thr Val Leu Gly His Gly Thr Pro Ser Arg Val Asp

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3407      8850      8855      8860
3408 Leu Glu Arg Ala Phe Arg Asp Thr Gly Phe Asp Ser Leu Thr Ala Val
3409 8865      8870      8875      8880
3410 Glu Leu Arg Asn Arg Leu Asn Ala Ala Thr Gly Leu Arg Leu Pro Ala
3411      8885      8890      8895
3412 Thr Leu Val Phe Asp His Pro Thr Pro Gly Glu Leu Ala Gly His Leu
3413      8900      8905      8910
3414 Leu Asp Glu Leu Ala Thr Ala Ala Gly Gly Ser Trp Ala Glu Gly Thr
3415      8915      8920      8925
3416 Gly Ser Gly Asp Thr Ala Ser Ala Thr Asp Arg Gln Thr Thr Ala Ala
3417      8930      8935      8940
3418 Leu Ala Glu Leu Asp Arg Leu Glu Gly Val Leu Ala Ser Leu Ala Pro
3419 8945      8950      8955      8960
3420 Ala Ala Gly Gly Arg Pro Glu Leu Ala Ala Arg Leu Arg Ala Leu Ala
3421      8965      8970      8975
3422 Ala Ala Leu Gly Asp Asp Gly Asp Asp Ala Thr Asp Leu Asp Glu Ala
3423      8980      8985      8990
3424 Ser Asp Asp Asp Leu Phe Ser Phe Ile Asp Lys Glu Leu Gly Asp Ser
3425      8995      9000      9005
3426 Asp Phe Met Ala Asn Asn Glu Asp Lys Leu Arg Asp Tyr Leu Lys Arg
3427 9010      9015      9020
3428 Val Thr Ala Glu Leu Gln Gln Asn Thr Arg Arg Leu Arg Glu Ile Glu
3429 9025      9030      9035      9040
3430 Gly Arg Thr His Glu Pro Val Ala Ile Val Gly Met Ala Cys Arg Leu
3431      9045      9050      9055
3432 Pro Gly Gly Val Ala Ser Pro Glu Asp Leu Trp Gln Leu Val Ala Gly
3433      9060      9065      9070
3434 Asp Gly Asp Ala Ile Ser Glu Phe Pro Gln Asp Arg Gly Trp Asp Val
3435      9075      9080      9085
3436 Glu Gly Leu Tyr Asp Pro Asp Pro Asp Ala Ser Gly Arg Thr Tyr Cys
3437 9090      9095      9100
3438 Arg Ser Gly Gly Phe Leu His Asp Ala Gly Glu Phe Asp Ala Asp Phe
3439 9105      9110      9115      9120
3440 Phe Gly Ile Ser Pro Arg Glu Ala Leu Ala Met Asp Pro Gln Gln Arg
3441      9125      9130      9135
3442 Leu Ser Leu Thr Thr Ala Trp Glu Ala Ile Glu Ser Ala Gly Ile Asp
3443      9140      9145      9150
3444 Pro Thr Ala Leu Lys Gly Ser Gly Leu Gly Val Phe Val Gly Gly Trp
3445      9155      9160      9165
3446 His Thr Gly Tyr Thr Ser Gly Gln Thr Thr Ala Val Gln Ser Pro Glu
3447 9170      9175      9180
3448 Leu Glu Gly His Leu Val Ser Gly Ala Ala Leu Gly Phe Leu Ser Gly
3449 9185      9190      9195      9200
3450 Arg Ile Ala Tyr Val Leu Gly Thr Asp Gly Pro Ala Leu Thr Val Asp
3451      9205      9210      9215
3452 Thr Ala Cys Ser Ser Ser Leu Val Ala Leu His Leu Ala Val Gln Ala
3453      9220      9225      9230
3454 Leu Arg Lys Gly Glu Cys Asp Met Ala Leu Ala Gly Gly Val Thr Val
3455      9235      9240      9245

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3456 Met Pro Asn Ala Asp Leu Phe Val Gln Phe Ser Arg Gln Arg Gly Leu
3457      9250      9255      9260
3458 Ala Ala Asp Gly Arg Ser Lys Ala Phe Ala Thr Ser Ala Asp Gly Phe
3459      9265      9270      9275      9280
3460 Gly Pro Ala Glu Gly Ala Gly Val Leu Leu Val Glu Arg Leu Ser Asp
3461      9285      9290      9295
3462 Ala Arg Arg Asn Gly His Arg Ile Leu Ala Val Val Arg Gly Ser Ala
3463      9300      9305      9310
3464 Val Asn Gln Asp Gly Ala Ser Asn Gly Leu Thr Ala Pro His Gly Pro
3465      9315      9320      9325
3466 Ser Gln Gln Arg Val Ile Arg Arg Ala Leu Ala Asp Ala Arg Leu Ala
3467      9330      9335      9340
3468 Pro Gly Asp Val Asp Val Val Glu Ala His Gly Thr Gly Thr Arg Leu
3469      9345      9350      9355      9360
3470 Gly Asp Pro Ile Glu Ala Gln Ala Leu Ile Ala Thr Tyr Gly Gln Glu
3471      9365      9370      9375
3472 Lys Ser Ser Glu Gln Pro Leu Arg Leu Gly Ala Leu Lys Ser Asn Ile
3473      9380      9385      9390
3474 Gly His Thr Gln Ala Ala Ala Gly Val Ala Gly Val Ile Lys Met Val
3475      9395      9400      9405
3476 Gln Ala Met Arg His Gly Leu Leu Pro Lys Thr Leu His Val Asp Glu
3477      9410      9415      9420
3478 Pro Ser Asp Gln Ile Asp Trp Ser Ala Gly Thr Val Glu Leu Leu Thr
3479      9425      9430      9435      9440
3480 Glu Ala Val Asp Trp Pro Glu Lys Gln Asp Gly Gly Leu Arg Arg Ala
3481      9445      9450      9455
3482 Ala Val Ser Ser Phe Gly Ile Ser Gly Thr Asn Ala His Val Val Leu
3483      9460      9465      9470
3484 Glu Glu Ala Pro Ala Val Glu Asp Ser Pro Ala Val Glu Pro Pro Ala
3485      9475      9480      9485
3486 Gly Gly Gly Val Val Pro Trp Pro Val Ser Ala Lys Thr Pro Ala Ala
3487      9490      9495      9500
3488 Leu Asp Ala Gln Ile Gly Gln Leu Ala Ala Tyr Ala Asp Gly Arg Thr
3489      9505      9510      9515      9520
3490 Asp Val Asp Pro Ala Val Ala Ala Arg Ala Leu Val Asp Ser Arg Thr
3491      9525      9530      9535
3492 Ala Met Glu His Arg Ala Val Ala Val Gly Asp Ser Arg Glu Ala Leu
3493      9540      9545      9550
3494 Arg Asp Ala Leu Arg Met Pro Glu Gly Leu Val Arg Gly Thr Ser Ser
3495      9555      9560      9565
3496 Asp Val Gly Arg Val Ala Phe Val Phe Pro Gly Gln Gly Thr Gln Trp
3497      9570      9575      9580
3498 Ala Gly Met Gly Ala Glu Leu Leu Asp Ser Ser Pro Glu Phe Ala Ala
3499      9585      9590      9595      9600
3500 Ser Met Ala Glu Cys Glu Thr Ala Leu Ser Arg Tyr Val Asp Trp Ser
3501      9605      9610      9615
3502 Leu Glu Ala Val Val Arg Gln Glu Pro Gly Ala Pro Thr Leu Asp Arg
3503      9620      9625      9630
3504 Val Asp Val Val Gln Pro Val Thr Phe Ala Val Met Val Ser Leu Ala

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3505          9635          9640          9645
3506 Lys Val Trp Gln His His Gly Ile Thr Pro Gln Ala Val Val Gly His
3507          9650          9655          9660
3508 Ser Gln Gly Glu Ile Ala Ala Tyr Val Ala Gly Ala Leu Thr Leu
3509          9665          9670          9675          9680
3510 Asp Asp Ala Ala Arg Val Val Thr Leu Arg Ser Lys Ser Ile Ala Ala
3511          9685          9690          9695
3512 His Leu Ala Gly Lys Gly Gly Met Ile Ser Leu Ala Leu Asp Glu Ala
3513          9700          9705          9710
3514 Ala Val Leu Lys Arg Leu Ser Asp Phe Asp Gly Leu Ser Val Ala Ala
3515          9715          9720          9725
3516 Val Asn Gly Pro Thr Ala Thr Val Val Ser Gly Asp Pro Thr Gln Ile
3517          9730          9735          9740
3518 Glu Glu Leu Ala Arg Thr Cys Glu Ala Asp Gly Val Arg Ala Arg Ile
3519          9745          9750          9755          9760
3520 Ile Pro Val Asp Tyr Ala Ser His Ser Arg Gln Val Glu Ile Ile Glu
3521          9765          9770          9775
3522 Lys Glu Leu Ala Glu Val Leu Ala Gly Leu Ala Pro Gln Ala Pro His
3523          9780          9785          9790
3524 Val Pro Phe Phe Ser Thr Leu Glu Gly Thr Trp Ile Thr Glu Pro Val
3525          9795          9800          9805
3526 Leu Asp Gly Thr Tyr Trp Tyr Arg Asn Leu Arg His Arg Val Gly Phe
3527          9810          9815          9820
3528 Ala Pro Ala Val Glu Thr Leu Ala Val Asp Gly Phe Thr His Phe Ile
3529          9825          9830          9835          9840
3530 Glu Val Ser Ala His Pro Val Leu Thr Met Thr Leu Pro Glu Thr Val
3531          9845          9850          9855
3532 Thr Gly Leu Gly Thr Leu Arg Arg Glu Gln Gly Gly Gln Glu Arg Leu
3533          9860          9865          9870
3534 Val Thr Ser Leu Ala Glu Ala Trp Ala Asn Gly Leu Thr Ile Asp Trp
3535          9875          9880          9885
3536 Ala Pro Ile Leu Pro Thr Ala Thr Gly His His Pro Glu Leu Pro Thr
3537          9890          9895          9900
3538 Tyr Ala Phe Gln Thr Glu Arg Phe Trp Leu Gln Ser Ser Ala Pro Thr
3539          9905          9910          9915          9920
3540 Ser Ala Ala Asp Asp Trp Arg Tyr Arg Val Glu Trp Lys Pro Leu Thr
3541          9925          9930          9935
3542 Ala Ser Gly Gln Ala Asp Leu Ser Gly Arg Trp Ile Val Ala Val Gly
3543          9940          9945          9950
3544 Ser Glu Pro Glu Ala Glu Leu Leu Gly Ala Leu Lys Ala Ala Gly Ala
3545          9955          9960          9965
3546 Glu Val Asp Val Leu Glu Ala Gly Ala Asp Asp Asp Arg Glu Ala Leu
3547          9970          9975          9980
3548 Ala Ala Arg Leu Thr Ala Leu Thr Thr Gly Asp Gly Phe Thr Gly Val
3549          9985          9990          9995          10000
3550 Val Ser Leu Leu Asp Asp Leu Val Pro Gln Val Ala Trp Val Gln Ala
3551          10005          10010          10015
3552 Leu Gly Asp Ala Gly Ile Lys Ala Pro Leu Trp Ser Val Thr Gln Gly
3553          10020          10025          10030

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

3554 Ala Val Ser Val Gly Arg Leu Asp Thr Pro Ala Asp Pro Asp Arg Ala  
 3555 10035 10040 10045  
 3556 Met Leu Trp Gly Leu Gly Arg Val Val Ala Leu Glu His Pro Glu Arg  
 E--> 3557 10050 10055 10060 1  
 3558 Trp Ala Gly Leu Val Asp Leu Pro Ala Gln Pro Asp Ala Ala Ala Leu  
 E--> 3559 0065 10070 10075 10080  
 3560 Ala His Leu Val Thr Ala Leu Ser Gly Ala Thr Gly Glu Asp Gln Ile  
 3561 10085 10090 10095  
 3562 Ala Ile Arg Thr Thr Gly Leu His Ala Arg Arg Leu Ala Arg Ala Pro  
 3563 10100 10105 10110  
 3564 Leu His Gly Arg Arg Pro Thr Arg Asp Trp Gln Pro His Gly Thr Val  
 3565 10115 10120 10125  
 3566 Leu Ile Thr Gly Gly Thr Gly Ala Leu Gly Ser His Ala Ala Arg Trp  
 E--> 3567 10130 10135 10140 1  
 3568 Met Ala His His Gly Ala Glu His Leu Leu Leu Val Ser Arg Ser Gly  
 E--> 3569 0145 10150 10155 10160  
 3570 Glu Gln Ala Pro Gly Ala Thr Gln Leu Thr Ala Glu Leu Thr Ala Ser  
 3571 10165 10170 10175  
 3572 Gly Ala Arg Val Thr Ile Ala Ala Cys Asp Val Ala Asp Pro His Ala  
 3573 10180 10185 10190  
 3574 Met Arg Thr Leu Leu Asp Ala Ile Pro Ala Glu Thr Pro Leu Thr Ala  
 3575 10195 10200 10205  
 3576 Val Val His Thr Ala Gly Ala Pro Gly Gly Asp Pro Leu Asp Val Thr  
 E--> 3577 10210 10215 10220 1  
 3578 Gly Pro Glu Asp Ile Ala Arg Ile Leu Gly Ala Lys Thr Ser Gly Ala  
 E--> 3579 0225 10230 10235 10240  
 3580 Glu Val Leu Asp Asp Leu Leu Arg Gly Thr Pro Leu Asp Ala Phe Val  
 3581 10245 10250 10255  
 3582 Leu Tyr Ser Ser Asn Ala Gly Val Trp Gly Ser Gly Ser Gln Gly Val  
 3583 10260 10265 10270  
 3584 Tyr Ala Ala Ala Asn Ala His Leu Asp Ala Leu Ala Ala Arg Arg Arg  
 3585 10275 10280 10285  
 3586 Ala Arg Gly Glu Thr Ala Thr Ser Val Ala Trp Gly Leu Trp Ala Gly  
 E--> 3587 10290 10295 10300 1  
 3588 Asp Gly Met Gly Arg Gly Ala Asp Asp Ala Tyr Trp Gln Arg Arg Gly  
 E--> 3589 0305 10310 10315 10320  
 3590 Ile Arg Pro Met Ser Pro Asp Arg Ala Leu Asp Glu Leu Ala Lys Ala  
 3591 10325 10330 10335  
 3592 Leu Ser His Asp Glu Thr Phe Val Ala Val Ala Asp Val Asp Trp Glu  
 3593 10340 10345 10350  
 3594 Arg Phe Ala Pro Ala Phe Thr Val Ser Arg Pro Ser Leu Leu Asp  
 3595 10355 10360 10365  
 3596 Gly Val Pro Glu Ala Arg Gln Ala Leu Ala Ala Pro Val Gly Ala Pro  
 E--> 3597 10370 10375 10380 1  
 3598 Ala Pro Gly Asp Ala Ala Val Ala Pro Thr Gly Gln Ser Ser Ala Leu  
 E--> 3599 0385 10390 10395 10400  
 3600 Ala Ala Ile Thr Ala Leu Pro Glu Pro Glu Arg Arg Pro Ala Leu Leu  
 3601 10405 10410 10415  
 3602 Thr Leu Val Arg Thr His Ala Ala Ala Val Leu Gly His Ser Ser Pro

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3603          10420          10425          10430
3604 Asp Arg Val Ala Pro Gly Arg Ala Phe Thr Glu Leu Gly Phe Asp Ser
3605          10435          10440          10445
3606 Leu Thr Ala Val Gln Leu Arg Asn Gln Leu Ser Thr Val Val Gly Asn
E--> 3607          10450          10455          10460          1
3608 Arg Leu Pro Ala Thr Thr Val Phe Asp His Pro Thr Pro Ala Ala Leu
E--> 3609          0465          10470          10475          10480
3610 Ala Ala His Leu His Glu Ala Tyr Leu Ala Pro Ala Glu Pro Ala Pro
3611          10485          10490          10495
3612 Thr Asp Trp Glu Gly Arg Val Arg Arg Ala Leu Ala Glu Leu Pro Leu
3613          10500          10505          10510
3614 Asp Arg Leu Arg Asp Ala Gly Val Leu Asp Thr Val Leu Arg Leu Thr
3615          10515          10520          10525
3616 Gly Ile Glu Pro Glu Pro Gly Ser Gly Gly Ser Asp Gly Gly Ala Ala
E--> 3617          10530          10535          10540          1
3618 Asp Pro Gly Ala Glu Pro Glu Ala Ser Ile Asp Asp Leu Asp Ala Glu
E--> 3619          0545          10550          10555          10560
3620 Ala Leu Ile Arg Met Ala Leu Gly Pro Arg Asn Thr Met Thr Ser Ser
3621          10565          10570          10575
3622 Asn Glu Gln Leu Val Asp Ala Leu Arg Ala Ser Leu Lys Glu Asn Glu
3623          10580          10585          10590
3624 Glu Leu Arg Lys Glu Ser Arg Arg Arg Ala Asp Arg Arg Gln Glu Pro
3625          10595          10600          10605
3626 Met Ala Ile Val Gly Met Ser Cys Arg Phe Ala Gly Gly Ile Arg Ser
E--> 3627          10610          10615          10620          1
3628 Pro Glu Asp Leu Trp Asp Ala Val Ala Ala Gly Lys Asp Leu Val Ser
E--> 3629          0625          10630          10635          10640
3630 Glu Val Pro Glu Glu Arg Gly Trp Asp Ile Asp Ser Leu Tyr Asp Pro
3631          10645          10650          10655
3632 Val Pro Gly Arg Lys Gly Thr Thr Tyr Val Arg Asn Ala Ala Phe Leu
3633          10660          10665          10670
3634 Asp Asp Ala Ala Gly Phe Asp Ala Ala Phe Phe Gly Ile Ser Pro Arg
3635          10675          10680          10685
3636 Glu Ala Leu Ala Met Asp Pro Gln Gln Arg Gln Leu Leu Glu Ala Ser
E--> 3637          10690          10695          10700          1
3638 Trp Glu Val Phe Glu Arg Ala Gly Ile Asp Pro Ala Ser Val Arg Gly
E--> 3639          0705          10710          10715          10720
3640 Thr Asp Val Gly Val Tyr Val Gly Cys Gly Tyr Gln Asp Tyr Ala Pro
3641          10725          10730          10735
3642 Asp Ile Arg Val Ala Pro Glu Gly Thr Gly Gly Tyr Val Val Thr Gly
3643          10740          10745          10750
3644 Asn Ser Ser Ala Val Ala Ser Gly Arg Ile Ala Tyr Ser Leu Gly Leu
3645          10755          10760          10765
3646 Glu Gly Pro Ala Val Thr Val Asp Thr Ala Cys Ser Ser Ser Leu Val
E--> 3647          10770          10775          10780          1
3648 Ala Leu His Leu Ala Leu Lys Gly Leu Arg Asn Gly Asp Cys Ser Thr
E--> 3649          0785          10790          10795          10800
3650 Ala Leu Val Gly Gly Val Ala Val Leu Ala Thr Pro Gly Ala Phe Ile
3651          10805          10810          10815

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3652 Glu Phe Ser Ser Gln Gln Ala Met Ala Ala Asp Gly Arg Thr Lys Gly
3653          10820          10825          10830
3654 Phe Ala Ser Ala Ala Asp Gly Leu Ala Trp Gly Glu Gly Val Ala Val
3655          10835          10840          10845
3656 Leu Leu Leu Glu Arg Leu Ser Asp Ala Arg Arg Lys Gly His Arg Val
E--> 3657          10850          10855          10860          1
3658 Leu Ala Val Val Arg Gly Ser Ala Ile Asn Gln Asp Gly Ala Ser Asn
E--> 3659          0865          10870          10875          10880
3660 Gly Leu Thr Ala Pro His Gly Pro Ser Gln Gln His Leu Ile Arg Gln
3661          10885          10890          10895
3662 Ala Leu Ala Asp Ala Arg Leu Thr Ser Ser Asp Val Asp Val Val Glu
3663          10900          10905          10910
3664 Gly His Gly Thr Gly Thr Arg Leu Gly Asp Pro Ile Glu Ala Gln Ala
3665          10915          10920          10925
3666 Leu Leu Ala Thr Tyr Gly Gln Gly Arg Ala Pro Gly Gln Pro Leu Arg
E--> 3667          10930          10935          10940          1
3668 Leu Gly Thr Leu Lys Ser Asn Ile Gly His Thr Gln Ala Ala Ser Gly
E--> 3669          0945          10950          10955          10960
3670 Val Ala Gly Val Ile Lys Met Val Gln Ala Leu Arg His Gly Val Leu
3671          10965          10970          10975
3672 Pro Lys Thr Leu His Val Asp Glu Pro Thr Asp Gln Val Asp Trp Ser
3673          10980          10985          10990
3674 Ala Gly Ser Val Glu Leu Leu Thr Glu Ala Val Asp Trp Pro Glu Arg
3675          10995          11000          11005
3676 Pro Gly Arg Leu Arg Arg Ala Gly Val Ser Ala Phe Gly Val Gly Gly
E--> 3677          11010          11015          11020          1
3678 Thr Asn Ala His Val Val Leu Glu Glu Ala Pro Ala Val Glu Glu Ser
E--> 3679          1025          11030          11035          11040
3680 Pro Ala Val Glu Pro Pro Ala Gly Gly Gly Val Val Pro Trp Pro Val
3681          11045          11050          11055
3682 Ser Ala Lys Thr Ser Ala Ala Leu Asp Ala Gln Ile Gly Gln Leu Ala
3683          11060          11065          11070
3684 Ala Tyr Ala Glu Asp Arg Thr Asp Val Asp Pro Ala Val Ala Ala Arg
3685          11075          11080          11085
3686 Ala Leu Val Asp Ser Arg Thr Ala Met Glu His Arg Ala Val Ala Val
E--> 3687          11090          11095          11100          1
3688 Gly Asp Ser Arg Glu Ala Leu Arg Asp Ala Leu Arg Met Pro Glu Gly
E--> 3689          1105          11110          11115          11120
3690 Leu Val Arg Gly Thr Val Thr Asp Pro Gly Arg Val Ala Phe Val Phe
3691          11125          11130          11135
3692 Pro Gly Gln Gly Thr Gln Trp Ala Gly Met Gly Ala Glu Leu Leu Asp
3693          11140          11145          11150
3694 Ser Ser Pro Glu Phe Ala Ala Ala Met Ala Glu Cys Glu Thr Ala Leu
3695          11155          11160          11165
3696 Ser Pro Tyr Val Asp Trp Ser Leu Glu Ala Val Val Arg Gln Ala Pro
E--> 3697          11170          11175          11180          1
3698 Ser Ala Pro Thr Leu Asp Arg Val Asp Val Val Gln Pro Val Thr Phe
E--> 3699          1185          11190          11195          11200
3700 Ala Val Met Val Ser Leu Ala Lys Val Trp Gln His His Gly Ile Thr

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3701          11205          11210          11215
3702 Pro Glu Ala Val Ile Gly His Ser Gln Gly Glu Ile Ala Ala Tyr
3703          11220          11225          11230
3704 Val Ala Gly Ala Leu Thr Leu Asp Asp Ala Ala Arg Val Val Thr Leu
3705          11235          11240          11245
3706 Arg Ser Lys Ser Ile Ala Ala His Leu Ala Gly Lys Gly Met Ile
E--> 3707          11250          11255          11260          1
3708 Ser Leu Ala Leu Ser Glu Glu Ala Thr Arg Gln Arg Ile Glu Asn Leu
E--> 3709          1265          11270          11275          11280
3710 His Gly Leu Ser Ile Ala Ala Val Asn Gly Pro Thr Ala Thr Val Val
3711          11285          11290          11295
3712 Ser Gly Asp Pro Thr Gln Ile Gln Glu Leu Ala Gln Ala Cys Glu Ala
3713          11300          11305          11310
3714 Asp Gly Ile Arg Ala Arg Ile Ile Pro Val Asp Tyr Ala Ser His Ser
3715          11315          11320          11325
3716 Ala His Val Glu Thr Ile Glu Asn Glu Leu Ala Asp Val Leu Ala Gly
E--> 3717          11330          11335          11340          1
3718 Leu Ser Pro Gln Thr Pro Gln Val Pro Phe Phe Ser Thr Leu Glu Gly
E--> 3719          1345          11350          11355          11360
3720 Thr Trp Ile Thr Glu Pro Ala Leu Asp Gly Gly Tyr Trp Tyr Arg Asn
3721          11365          11370          11375
3722 Leu Arg His Arg Val Gly Phe Ala Pro Ala Val Glu Thr Leu Ala Thr
3723          11380          11385          11390
3724 Asp Glu Gly Phe Thr His Phe Ile Glu Val Ser Ala His Pro Val Leu
3725          11395          11400          11405
3726 Thr Met Thr Leu Pro Asp Lys Val Thr Gly Leu Ala Thr Leu Arg Arg
E--> 3727          11410          11415          11420          1
3728 Glu Asp Gly Gly Gln His Arg Leu Thr Thr Ser Leu Ala Glu Ala Trp
E--> 3729          1425          11430          11435          11440
3730 Ala Asn Gly Leu Ala Leu Asp Trp Ala Ser Leu Leu Pro Ala Thr Gly
3731          11445          11450          11455
3732 Ala Leu Ser Pro Ala Val Pro Asp Leu Pro Thr Tyr Ala Phe Gln His
3733          11460          11465          11470
3734 Arg Ser Tyr Trp Ile Ser Pro Ala Gly Pro Gly Glu Ala Pro Ala His
3735          11475          11480          11485
3736 Thr Ala Ser Gly Arg Glu Ala Val Ala Glu Thr Gly Leu Ala Trp Gly
E--> 3737          11490          11495          11500          1
3738 Pro Gly Ala Glu Asp Leu Asp Glu Glu Gly Arg Ser Ala Val Leu
E--> 3739          1505          11510          11515          11520
3740 Ala Met Val Met Arg Gln Ala Ala Ser Val Leu Arg Cys Asp Ser Pro
3741          11525          11530          11535
3742 Glu Glu Val Pro Val Asp Arg Pro Leu Arg Glu Ile Gly Phe Asp Ser
3743          11540          11545          11550
3744 Leu Thr Ala Val Asp Phe Arg Asn Arg Val Asn Arg Leu Thr Gly Leu
3745          11555          11560          11565
3746 Gln Leu Pro Pro Thr Val Val Phe Gln His Pro Thr Pro Val Ala Leu
E--> 3747          11570          11575          11580          1
3748 Ala Glu Arg Ile Ser Asp Glu Leu Ala Glu Arg Asn Trp Ala Val Ala
E--> 3749          1585          11590          11595          11600

```



## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3750  Glu Pro Ser Asp His Glu Gln Ala Glu Glu Glu Lys Ala Ala Ala Pro
3751              11605              11610              11615
3752  Ala Gly Ala Arg Ser Gly Ala Asp Thr Gly Ala Gly Ala Gly Met Phe
3753              11620              11625              11630
3754  Arg Ala Leu Phe Arg Gln Ala Val Glu Asp Asp Arg Tyr Gly Glu Phe
3755              11635              11640              11645
3756  Leu Asp Val Leu Ala Glu Ala Ser Ala Phe Arg Pro Gln Phe Ala Ser
E--> 3757      11650              11655              11660              1
3758  Pro Glu Ala Cys Ser Glu Arg Leu Asp Pro Val Leu Leu Ala Gly Gly
E--> 3759      1665              11670              11675              11680
3760  Pro Thr Asp Arg Ala Glu Gly Arg Ala Val Leu Val Gly Cys Thr Gly
3761              11685              11690              11695
3762  Thr Ala Ala Asn Gly Gly Pro His Glu Phe Leu Arg Leu Ser Thr Ser
3763              11700              11705              11710
3764  Phe Gln Glu Glu Arg Asp Phe Leu Ala Val Pro Leu Pro Gly Tyr Gly
3765              11715              11720              11725
3766  Thr Gly Thr Gly Thr Gly Thr Ala Leu Leu Pro Ala Asp Leu Asp Thr
E--> 3767      11730              11735              11740              1
3768  Ala Leu Asp Ala Gln Ala Arg Ala Ile Leu Arg Ala Ala Gly Asp Ala
E--> 3769      1745              11750              11755              11760
3770  Pro Val Val Leu Leu Gly His Ser Gly Gly Ala Leu Leu Ala His Glu
3771              11765              11770              11775
3772  Leu Ala Phe Arg Leu Glu Arg Ala His Gly Ala Pro Pro Ala Gly Ile
3773              11780              11785              11790
3774  Val Leu Val Asp Pro Tyr Pro Pro Gly His Gln Glu Pro Ile Glu Val
3775              11795              11800              11805
3776  Trp Ser Arg Gln Leu Gly Glu Gly Leu Phe Ala Gly Glu Leu Glu Pro
E--> 3777      11810              11815              11820              1
3778  Met Ser Asp Ala Arg Leu Leu Ala Met Gly Arg Tyr Ala Arg Phe Leu
E--> 3779      1825              11830              11835              11840
3780  Ala Gly Pro Arg Pro Gly Arg Ser Ser Ala Pro Val Leu Leu Val Arg
3781              11845              11850              11855
3782  Ala Ser Glu Pro Leu Gly Asp Trp Gln Glu Glu Arg Gly Asp Trp Arg
3783              11860              11865              11870
3784  Ala His Trp Asp Leu Pro His Thr Val Ala Asp Val Pro Gly Asp His
3785              11875              11880              11885
3786  Phe Thr Met Met Arg Asp His Ala Pro Ala Val Ala Glu Ala Val Leu
E--> 3787      11890              11895              11900              1
3788  Ser Trp Leu Asp Ala Ile Glu Gly Ile Glu Gly Ala Gly Lys Met Thr
E--> 3789      1905              11910              11915              11920
3790  Asp Arg Pro Leu Asn Val Asp Ser Gly Leu Trp Ile Arg Arg Phe His
3791              11925              11930              11935
3792  Pro Ala Pro Asn Ser Ala Val Arg Leu Val Cys Leu Pro His Ala Gly
3793              11940              11945              11950
3794  Gly Ser Ala Ser Tyr Phe Phe Arg Phe Ser Glu Glu Leu His Pro Ser
3795              11955              11960              11965
3796  Val Glu Ala Leu Ser Val Gln Tyr Pro Gly Arg Gln Asp Arg Arg Ala
E--> 3797      11970              11975              11980              1
3798  Glu Pro Cys Leu Glu Ser Val Glu Glu Leu Ala Glu His Val Val Ala

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

E--> 3799      1985              11990              11995              12000
3800 Ala Thr Glu Pro Trp Trp Gln Glu Gly Arg Leu Ala Phe Phe Gly His
3801              12005              12010              12015
3802 Ser Leu Gly Ala Ser Val Ala Phe Glu Thr Ala Arg Ile Leu Glu Gln
3803              12020              12025              12030
3804 Arg His Gly Val Arg Pro Glu Gly Leu Tyr Val Ser Gly Arg Arg Ala
3805              12035              12040              12045
3806 Pro Ser Leu Ala Pro Asp Arg Leu Val His Gln Leu Asp Asp Arg Ala
E--> 3807      12050              12055              12060              1
3808 Phe Leu Ala Glu Ile Arg Arg Leu Ser Gly Thr Asp Glu Arg Phe Leu
E--> 3809      2065              12070              12075              12080
3810 Gln Asp Asp Glu Leu Leu Arg Leu Val Leu Pro Ala Leu Arg Ser Asp
3811              12085              12090              12095
3812 Tyr Lys Ala Ala Glu Thr Tyr Leu His Arg Pro Ser Ala Lys Leu Thr
3813              12100              12105              12110
3814 Cys Pro Val Met Ala Leu Ala Gly Asp Arg Asp Pro Lys Ala Pro Leu
3815              12115              12120              12125
3816 Asn Glu Val Ala Glu Trp Arg Arg His Thr Ser Gly Pro Phe Cys Leu
E--> 3817      12130              12135              12140              1
3818 Arg Ala Tyr Ser Gly Gly His Phe Tyr Leu Asn Asp Gln Trp His Glu
E--> 3819      2145              12150              12155              12160
3820 Ile Cys Asn Asp Ile Ser Asp His Leu Leu Val Thr Arg Gly Ala Pro
3821              12165              12170              12175
3822 Asp Ala Arg Val Gln Pro Pro Thr Ser Leu Ile Glu Gly Ala Ala
3823              12180              12185              12190
3824 Lys Arg Trp Trp Gln Asn Pro Arg
E--> 3825      12195              1
3830 <210> SEQ ID NO: 7
3831 <211> LENGTH: 1248
3832 <212> TYPE: DNA
3833 <213> ORGANISM: Streptomyces venezuelae
3835 <400> SEQUENCE: 7
E--> 3836      gtgaaaagcg ctttatccga cctcgcatc ttcggcggcc ccgccgcttt cgaccagccg
3837      60
E--> 3838      ctctctgtgg ggcgggccaa cgcacatcgac cgcgccaggc tgtacgagcg gctcgaccgg
3839      120
E--> 3840      gccctcgaca gccagtggct gtccaacggc ggcccgcctcg tccgcgagtt cgaggagcgc
3841      180
E--> 3842      gtcgcccggc tcgcccgggt cggcctatgcc gtggccacct gcaacgccac ggcccgggctc
3843      240
E--> 3844      cagctcctcg cgcacgccgc cggcctcacc ggccaagtga tcatgccgtc gatgacgttc
3845      300
E--> 3846      gccgccaccc cgcaacgact gcgctggatc ggccctaccc cggctcttcgc cgacatcgac
3847      360
E--> 3848      ccggacaccg gcaacctcga cccggaccag gtggccgccc cggtcacacc ccgcacctcg
3849      420
E--> 3850      gccgtcgtcg gcgtccacct ctggggccgc cctgcgccg ccgaccagct gcggaaggtc
3851      480
E--> 3852      gccgacgagc acggcctgcg gctgtacttc gacgccgcgc acgccctcgg ctgcgcggtc

```

pp-32-52  
 Errors - see error  
 summary sheet, Item 1

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3853 540
E--> 3854 gacggccggc ccgcccgcag cctcggcgac gccgaggtct tcagcttcca cgccaccaag
3855 600
E--> 3856 gccgtcaacg ccttcgaggg cggcgcgctc gtcaccgacg acgccgacct cgccgcccgg
3857 660
E--> 3858 atccgcgccc tccacaactt cggcttcgac ctgcccggcg gcagccccgc cggcggggacc
3859 720
E--> 3860 aacgccaaga tgagcgaggc cgcgcgcgcc atgggcctca cctccctcga cgcgtttccc
3861 780
E--> 3862 gaggtcatcg accggaaccg gcgcaaccac gccgcctacc gcgagcacct cgcggacctc
3863 840
E--> 3864 cccggcgctc tcgtcgccga ccacgaccgc caccggcctca acaaccacca gtacgtgatc
3865 900
E--> 3866 gtcgagatcg acgaggccac caccggcctc caccgcgacc tcgtcatgga ggtcctgaag
3867 960
E--> 3868 gccgaaggcg tgcacaccgc cgcctacttc tcgcggggt gccacgagct ggagccgtac
3869 1020
E--> 3870 cgcgggcagc cgcacgcccc gctgcgcgac accgaacgcc tcgcgcgcgc cgtgctgtcc
3871 1080
E--> 3872 ctgcgcgacc gcaccgccat cggcgacgac gacatccgcc gggtcgcgca cctgctgcgt
3873 1140
E--> 3874 ctctgcgcga cccgcggcgc cgaactgacc gcgcgccacc gcgacacggc ccccgccccg
3875 1200
E--> 3876 ctgcggcccc cccagacatc caccgccacg attggacgct cccgatga
3877 1248
3938 <210> SEQ ID NO: 9
3939 <211> LENGTH: 1458
3940 <212> TYPE: DNA
3941 <213> ORGANISM: Streptomyces venezuelae
3943 <400> SEQUENCE: 9
E--> 3944 atgaccgccc ccgcccttcc cgccaccgcc ccggccgaac gctgcgcgca ccccgagacc
3945 60
E--> 3946 gatctggggg cggcgggtcca cgccgtcggc cagaccctcg ccgcggcgcg cctcgtgcgc
3947 120
E--> 3948 cccgacgagg ccggaacgac cgcccgccac ctgctcgggc tcgccgtgcg ctacggcaac
3949 180
E--> 3950 agcccccttca ccccgctgga ggaggccccgc cagcacctgg gcgtcgaccg ggacgccttc
3951 240
E--> 3952 cggcgccctcc tcgcctgttt cgggcaggtc ccggagctcc gcaccgcggt cgagaccggc
3953 300
E--> 3954 cccgcggggg cgtactggaa gaacaccctg ctcccgtcgc aacagcgcgg cgtcttcgac
3955 360
E--> 3956 gcggcgctcg ccaggaagcc cgtcttcccg tacagcgtcg gcctctaccc cggcccgcac
3957 420
E--> 3958 tgcattgttc gctgccactt ctgcgtcgtg gtgaccggcg cccgctacga cccgtccgcc
3959 480
E--> 3960 ctcgacgcgc gcaacgccat gttccggctg gtcacgcgac agataccgcg gggcaacccc
3961 540
E--> 3962 tcggcgatgt acttctccgg cggcctggag ccgctcacca accccggcct cgggagcctg

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

3963 600
E--> 3964 gccgcgcacg ccaccgacca cggcctgcgg cccaccgtct acacgaactc cttegcgctc
3965 660
E--> 3966 accgagcgca ccctggagcg ccagcccggc ctctggggcc tgcacgccat ccgcacctcg
3967 720
E--> 3968 ctctacggcc tcaacgacga ggagtacgag cagaccaccg gcaagaaggc cgccttccgc
3969 780
E--> 3970 cgcgtccgcg agaacctgcg ccgcttccag cagctgcgcg ccgagcgcgga gtcgccgata
3971 840
E--> 3972 aacctcggtt tcgctacat cgtgctcccg ggccgtgcct cccgctgct cgacctggtc
3973 900
E--> 3974 gacttcacg ccgacctcaa cgacgccggg cagggcagga cgategactt cgtcaacatt
3975 960
E--> 3976 cgcgaggact acagcggccg tgacgacggc aagctgccg aggaggagcg ggccgagctc
3977 1020
E--> 3978 caggaggccc tcaacgcctt cgaggagcg gtcgcgagc gcaccccccg actccacatc
3979 1080
E--> 3980 gactacggct acgccctgaa cagcctgcgc accggggccg acgccgaact gctgcggatc
3981 1140
E--> 3982 aagcccgcca ccatgcggcc caccgcgcac ccgcaggctc cgggtgcaggc cgatctcttc
3983 1200
E--> 3984 ggcgacgtgt acctgtaccg cgaggccggc tccccgacc tggacggcgc gaccgctac
3985 1260
E--> 3986 atcgcgggcc gcgtgacccc cgacacctcc ctcaccgagg tcgtcaggga cttegtcgag
3987 1320
E--> 3988 cgcggcgggc aggtggcggc cgtcgacggc gacgagtact tcatggacgg cttegatcag
3989 1380
E--> 3990 gtcgtcaccg cccgcctgaa ccagctggag cgcgacgccg cggacggctg ggaggaggcc
3991 1440
E--> 3992 cgcggcttcc tgcgtga
3993 1458
4064 <210> SEQ ID NO: 11
4065 <211> LENGTH: 879
4066 <212> TYPE: DNA
4067 <213> ORGANISM: Streptomyces venezuelae
4069 <400> SEQUENCE: 11
E--> 4070 atgaagggaa tagtcctggc cggcgggagc ggaactcggc tgcattccggc gacctcggtc
4071 60
E--> 4072 atttcgaagc agattcttcc ggtctacaac aaaccgatga tctactatcc gctgtcggtt
4073 120
E--> 4074 ctcatgctcg gcggtattcg cgagattcaa atcatctcga cccccagca catcgaactc
4075 180
E--> 4076 ttccagtcgc ttctcggaac cggcaggcac ctgggaatag aactcgacta tgcggtccag
4077 240
E--> 4078 aaagagcccg caggaatcgc ggacgcactt ctgctcggag ccgagcacat cggcgacgac
4079 300
E--> 4080 acctgcgcc tgatcctggg cgacaacatc ttccacgggc cgggcctcta cagctcctg
4081 360
E--> 4082 cgggacagca tcgcgcgcct cgacggctgc gtgctcttcg gctaccgggt caaggacccc

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

4083 420
E--> 4084 gagcggtacg gcgtcgccga ggtggacgcg acgggccggc tgaccgacct cgtcgagaag
4085 480
E--> 4086 cccgtcaagc cgcgtccaa cctcgccgtc accggcctct acctctacga caacgacgtc
4087 540
E--> 4088 gtcgacatcg ccaagaacat ccggccctcg ccgcgcggcg agctggagat caccgacgtc
4089 600
E--> 4090 aaccgcgtct acctggagcg gggccggggc gaactcgtca acctggggcg cggcttcgcc
4091 660
E--> 4092 tggttgga cggcaccca cgactcgctc ctgcggggcg cccagtacgt ccaggtcctg
4093 720
E--> 4094 gaggagcggc agggcgctct gatcgcgggc cttgaggaga tcgccttcg catgggcttc
4095 780
E--> 4096 atcgacgccc aggcctgtca cggcctggga gaaggcctct cccgcaccga gtacggcagc
4097 840
E--> 4098 tatctgatgg agatcgccgg ccgcgagggg gccccgtga
4099 879
4146 <210> SEQ ID NO: 13
4147 <211> LENGTH: 1014
4148 <212> TYPE: DNA
4149 <213> ORGANISM: Streptomyces venezuelae
4151 <400> SEQUENCE: 13
E--> 4152 gtgcggttc tggtgaccgg aggtgcgggc ttcacgggt cgcacttcgt gcggcagctc
4153 60
E--> 4154 ctgcggggg cgtaccccg cgtgcccgc gatgaggtga tcgtcctgga cagcctcacc
4155 120
E--> 4156 tacgcgggc accgcgcaa cctcgccccg gtggacgcg acccgcgact gcgcttcgtc
4157 180
E--> 4158 caggcgaca tccgcgacgc cgccctctc gcccggaac tgcggggcgt ggacgccatc
4159 240
E--> 4160 gtccacttc cgccgagag ccacgtggac cgctccatcg cgggcgcgtc cgtgttcacc
4161 300
E--> 4162 gagaccaac tgcagggcac gcagacgtg ctccagtgc cgtcgacgc cggcgtcggc
4163 360
E--> 4164 cgggtcgtgc acgtctccac cgacgaggtg tacgggtcga tcgactccgg ctctggacc
4165 420
E--> 4166 gagagcagcc cgctggagcc caactcgccc tacgggcgt ccaaggccgg ctccgacctc
4167 480
E--> 4168 gttgcccgc cctaccacc gacgtacggc ctgcacgtac ggatcaccgg ctgctgcaac
4169 540
E--> 4170 aactacggc cgtaccagca ccccgagaag ctcatcccc tcttcgtgac gaacctctc
4171 600
E--> 4172 gacggcgga cgctcccgt gtacggcgac ggcgcgaac tccgcgagt ggtgcacacc
4173 660
E--> 4174 gacgaccact gccggggcat cgcgctcgtc ctgcggggcg gccggggccg cgagatctac
4175 720
E--> 4176 cacatcgcg gcggcctgga gctgaccaac cgcgaactca ccggcatcct cctggactcg
4177 780
E--> 4178 ctcggcgcg actggtctc ggtccggaag gtcgccgacc gcaaggcca cgacctgcg

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

4179      840
E--> 4180      tactccctcg acggcggcga gatcgagcgc gagctcggct accgcccgca ggtctccttc
4181      900
E--> 4182      gcggacggcc tcgcgcggac cgtccgctgg taccgggaga accgcggctg gtgggagccg
4183      960
E--> 4184      ctcaaggcga ccgccccgca gctgcccgcc accgcgctgg aggtgtccgc gtga
4185      1014
4238 <210> SEQ ID NO: 15
4239 <211> LENGTH: 1140
4240 <212> TYPE: DNA
4241 <213> ORGANISM: Streptomyces venezuelae
4243 <400> SEQUENCE: 15
E--> 4244      gtgagcagcc gcgcgagac cccccgcgtc cccttcctcg acctcaagge cgcctacgag
4245      60
E--> 4246      gagctccgcg cggagaccga cgccgcgata gcccgcgctc tcgactcggg gcgctacctc
4247      120
E--> 4248      ctcggaacctg aactcgaagg attcgaggcg gagttcgccg cgtactgcga gacggaccac
4249      180
E--> 4250      gccgtcggcg tgaacagcgg gatggacgcc ctccagctcg ccctccgcgg cctcggcacc
4251      240
E--> 4252      ggaccggggg acgaggtgat cgtccctctg cacacgtaca tcgccagctg gctcgcgggtg
4253      300
E--> 4254      tccgccacctg gcgcgacccc cgtgcccgtc gagccgcacg aggaccaccc caccctggac
4255      360
E--> 4256      ccgtgtctcg tcgagaaggc gatcaccccc cgcacccggg cgctcctccc cgtccacctc
4257      420
E--> 4258      tacgggcacc ccgccgacat ggacgccctc cgcgagctcg cggaccggca cggcctgcac
4259      480
E--> 4260      atcgtcgagg acgccgcgca ggcccacggc gcccgctacc ggggcggcg gatcggcgcc
4261      540
E--> 4262      gggtcgtcgg tggccgcgtt cagctttctac ccgggcaaga acctcggctg cttcggcgac
4263      600
E--> 4264      ggcggcgccg tcgtcacccg cgaccccgag ctgcgcgaac ggctccggat gctccgcaac
4265      660
E--> 4266      tacggctcgc ggcagaagta cagccacgag acgaagggca ccaactcccc cctggacgag
4267      720
E--> 4268      atgcaggccg ccgtgtctcg gatccggctc gccacactgg acagctggaa cggccgcagg
4269      780
E--> 4270      tcggcgctgg ccgcggagta cctctccggg ctgcgcggac tgcccggcat cggcctgcgg
4271      840
E--> 4272      gtgaccgcgc ccgacaccga cccggtctgg cactcttca ccgtgcgcac cgagcgcgcg
4273      900
E--> 4274      gacgagctgc gcagccacct cgacgcccgc ggcacgcaca ccctcacgca ctaccggta
4275      960
E--> 4276      cccgtgcacc tctgcgccgc ctacgcgggc gaggcaccgc cggaaggctc gctcccgcg
4277      1020
E--> 4278      gccgagagct tcgcgcggca ggtcctcagc ctgccgateg gcccgcacct ggagcgcgcc
4279      1080
E--> 4280      caggcgctgc gggatgatga cgccgtgcgc gaatgggccc agcgggtcga ccaggcctag

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

4281 1140
4338 <210> SEQ ID NO: 17
4339 <211> LENGTH: 714
4340 <212> TYPE: DNA
4341 <213> ORGANISM: Streptomyces venezuelae
4343 <400> SEQUENCE: 17
E--> 4344 gtgtacgaag tcgaccacgc cgacgtctac gacctcttct acctgggtcg cggcaaggac
4345 60
E--> 4346 tacgccgccg aggcctccga catcgccgac ctggtgcgct cccgtacccc cgaggcctcc
4347 120
E--> 4348 tcgctcctgg acgtggcctg cggtaggggc acgcatctgg agcacttcac caaggagtgc
4349 180
E--> 4350 ggcgacaccg ccggcctgga gctgtccgag gacatgctca cccacgcccc caagcggtcg
4351 240
E--> 4352 cccgacgcca cgctccacca gggcgacatg cgggacttcc ggctcggccg gaagttctcc
4353 300
E--> 4354 gccgtggtca gcatgttcag ctccgtcggc tacctgaaga cgaccgagga actcggcgcg
4355 360
E--> 4356 gccgtgcgct cgttcgcgga gcacctggag cccggtggcg tcgtcgtcgt cgagccgtgg
4357 420
E--> 4358 tggttccccg agaccttcgc cgacggctgg gtcagcgccg acgtcgtccg ccgtgacggg
4359 480
E--> 4360 cgcaccgtgg cccgtgtctc gactcgggtg cgggagggga acgcgacgcg catggaggtc
4361 540
E--> 4362 cacttcaccg tggccgaccc gggcaagggc gtgcggcact tctccgacgt ccatctcatc
4363 600
E--> 4364 accctgttcc accaggccga gtacgaggcc gcgttcacgg ccgccgggct gcgcgtcgag
4365 660
E--> 4366 tacctggagg gcggcccgtc gggccgtggc ctcttcgtcg gcgtccccgc ctga
4367 714
4406 <210> SEQ ID NO: 19
4407 <211> LENGTH: 1281
4408 <212> TYPE: DNA
4409 <213> ORGANISM: Streptomyces venezuelae
4411 <400> SEQUENCE: 19
E--> 4412 atgcgcgtcc tgctgacctc gttegcacat cacacgcact actacggcct ggtgcccctg
4413 60
E--> 4414 gcctggggcg tgctcgccgc cgggcacgag gtgcgggtcg ccagccagcc cgcgctcacg
4415 120
E--> 4416 gacaccatca ccgggtccgg gctcgccgcg gtgcgggtcg gcaccgacca cctcatccac
4417 180
E--> 4418 gagtaccggg tgcggatggc gggcgagccg cgcccgaacc atccggcgat cgccttcgac
4419 240
E--> 4420 gaggcccgtc ccgagccgct ggactgggac cacgccctcg gcatcgaggc gatcctcgcc
4421 300
E--> 4422 ccgtacttcc atctgctcgc caacaacgac tcgatggtcg acgacctcgt cgacttcgcc
4423 360
E--> 4424 cggtcctggc agccggacct ggtgctgtgg gagccgacga cctacgcggg cgccgtcgcc
4425 420

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

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Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

E--> 4426      gccaggtca ccggtgccgc gcacgcccg gtctgtggg ggcccgacgt gatgggcagc
      4427      480
E--> 4428      gccgcgcga agttcgctgc gctgcgggac cggcagccgc ccgagcaccg cgaggacccc
      4429      540
E--> 4430      accgcggagt ggctgacgtg gacgctcgac cggtagcgcg cctccttcga agaggagctg
      4431      600
E--> 4432      ctacccggcc agttcacgat cgacccgacc ccgcccagcc tgcgcctcga cacgggcctg
      4433      660
E--> 4434      ccgaccgtcg ggatgcgtta tgttccttac aacggcacgt cggtcgtgcc ggactggctg
      4435      720
E--> 4436      agtgagccgc ccgcgcggcc ccgggtctgc ctgacctcg gcgtctccgc gcgtgaggtc
      4437      780
E--> 4438      ctgcggcgcg acggcgtctc gcagggcgac atcctggagg cgctcgccga cctcgacatc
      4439      840
E--> 4440      gagctcgctg ccacgctcga cgcgagtcag cgcgccgaga tccgcaacta cccgaagcac
      4441      900
E--> 4442      acccggttca cggacttcgt gccgatgcac gcgctcctgc cgagctgctc ggcgatcatc
      4443      960
E--> 4444      caccacggcg gggcgggcac ctacgcgacc gccgtgatca acgcggtgcc gcaggtcatg
      4445      1020
E--> 4446      ctgcgccgac tgtgggacgc gccgggtcaag gcgcggggcg tcgccgagca gggggcgggg
      4447      1080
E--> 4448      ttcttctctg ccgcggccga gctcacgccg caggccgtgc gggacgccgt cgtccgcacg
      4449      1140
E--> 4450      ctcgacgacc cctcggtcgc caccgccgcg caccggctgc gcgaggagac cttcggcgac
      4451      1200
E--> 4452      cccaccccg ccgggatcgt ccccgagctg gagcggctcg ccgcgcagca ccgccgcccg
      4453      1260
E--> 4454      ccggccgacg cccggcactg a
      4455      1281
4518 <210> SEQ ID NO: 21
4519 <211> LENGTH: 1209
4520 <212> TYPE: DNA
4521 <213> ORGANISM: Streptomyces venezuelae
4523 <400> SEQUENCE: 21
E--> 4524      gtgaccgacg acctgacggg ggccttcacg cagccccgc tgggccgcac cgtccgcgcg
      4525      60
E--> 4526      gtggccgacc gtgaactcgg caccacctc ctggagacc ccggcatcca ctggatccac
      4527      120
E--> 4528      gccgcgaacg gcgaccgta cgcaccgtg ctgcgcggcc aggcggacga cccgtatccc
      4529      180
E--> 4530      gcgtacgacg gggtgcgctg ccgcggcgcg ctctccttca gcccgcggg cagctgggtc
      4531      240
E--> 4532      accgcgatc acgccctggc ggcgagcatc ctctgctcga cggacttcgg ggtctccggc
      4533      300
E--> 4534      gccgacggcg tcccgggtgcc gcagcaggtc ctctcgtagc gggagggctg tccgctggag
      4535      360
E--> 4536      cgcgagcagg tgctgccggc ggccggtgac gtgccggagg gcgggcagcg tgccgtggtc
      4537      420

```



## RAW SEQUENCE LISTING

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TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

E--> 4538   gaggggatcc accgggagac gctggagggt ctgcgcgcgg acccgtcggc gtcgtacgcc
      4539   480
E--> 4540   ttcgagctgc tgggcggttt cgtccgcccg gcggtgacgg ccgctgccgc cgccgtgctg
      4541   540
E--> 4542   ggtgttcccg cggaccggcg cgcggacttc gcggatctgc tggagcggct ccggccgctg
      4543   600
E--> 4544   tccgacagcc tgctggcccc gcagtccctg cggacggtac gggcgggcga cggcgcgctg
      4545   660
E--> 4546   gccgagctca cggcgctgct cgccgattcg gacgactccc ccggggccct gctgtcggcg
      4547   720
E--> 4548   ctcggggtca ccgcagccgt ccagctcacc gggaacgcgg tgctcgcgct cctcgcgcac
      4549   780
E--> 4550   cccgagcagt ggcgggagct gtgcgaccgg cccgggctcg cggcgggcgc ggtggaggag
      4551   840
E--> 4552   accctccgct acgaccgcgc ggtgcagctc gacgcccggg tggtcgcggg ggagacggag
      4553   900
E--> 4554   ctggcgggcc ggcggctgcc ggccggggcg catgtcgtcg tcctgaccgc cgcgaccggc
      4555   960
E--> 4556   cgggaccgcg aggtcttcac ggaccgcggag cgcttcgacc tcgcgcgcgc cgacgcgcgc
      4557   1020
E--> 4558   gcgcacctcg cgctgcaccc cgccggtccg tacggcccgg tggcgctcct ggtccggctt
      4559   1080
E--> 4560   caggcgaggg tcgcgctgcg gaccctggcc gggcgtttcc ccgggctgcg gcaggcgggg
      4561   1140
E--> 4562   gacgtgctcc gccccgcgcg cgcgcctgtc ggccgcgggc cgctgagcgt cccggtcagc
      4563   1200
E--> 4564   agctcctga
      4565   1209
      4626 <210> SEQ ID NO: 23
      4627 <211> LENGTH: 2430
      4628 <212> TYPE: DNA
      4629 <213> ORGANISM: Streptomyces venezuelae
      4631 <400> SEQUENCE: 23
E--> 4632   gtgacaggta agaccgaat accgcgtgtc cgccgcgggc gcaccacgcc cagggccttc
      4633   60
E--> 4634   accctggccg tcgtcggcac cctgctggcg ggcaccaccg tggcgggcgc cgctccgggc
      4635   120
E--> 4636   gccgcgcaca cggccaatgt tcagtacacg agccggggcg cggagctcgt cgcccagatg
      4637   180
E--> 4638   acgctcgacg agaagatcag ctctgtccac tgggcgctgg accccgaccg gcagaacgtc
      4639   240
E--> 4640   ggctaccttc ccggcggtgcc gcgtctgggc atcccggagc tgctgcccgc cgacggcccc
      4641   300
E--> 4642   aacggcatcc gcctgggtggg gcagaccgcc accgcgctgc ccgcgcgggt cgccctggcc
      4643   360
E--> 4644   agcaccttcg acgacaccat ggccgacagc tacggcaagg tcatggggcg cgacggctcg
      4645   420
E--> 4646   gcgctcaacc aggacatggt cctgggcccc atgatgaaca acatccgggt gccgcacggc
      4647   480

```

## RAW SEQUENCE LISTING

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

E--> 4648      ggccggaact acgagacctt cagcgaggac cccctggtct cctcgcgcac cgcggtcgcc
      4649      540
E--> 4650      cagatcaagg gcatccaggg tgcgggtctg atgaccacgg ccaagcactt cgcggccaac
      4651      600
E--> 4652      aaccaggaga acaaccgctt ctccgtgaac gccaatgtcg acgagcagac gctccgcgag
      4653      660
E--> 4654      atcgagttec cggcgttcga ggcgtcctcc aaggccggcg cggcctcctt catgtgtgcc
      4655      720
E--> 4656      tacaacggcc tcaacgggaa gccgtcctgc ggcaacgacg agctcctcaa caacgtgctg
      4657      780
E--> 4658      cgcacgcagt ggggcttcca gggctgggtg atgtccgact ggctcgccac cccgggcacc
      4659      840
E--> 4660      gacgccatca ccaagggcct cgaccaggag atgggcgtcg agctccccgg cgacgtcccc
      4661      900
E--> 4662      aagggcgagc cctcgccgcc ggccaagttc ttcggcgagg cgctgaagac ggccgtcctg
      4663      960
E--> 4664      aacggcacgg tccccgaggc ggccgtgacg cggtcggcgg agcggatcgt cggccagatg
      4665      1020
E--> 4666      gagaagttec gtctgtcctt cgccactccg gcgccgcggc ccgagcgcgga caaggcgggt
      4667      1080
E--> 4668      gcccaggcgg tgtcccgcaa ggtcgccgag aacggcgcgg tgctcctgcg caacgagggc
      4669      1140
E--> 4670      caggccctgc cgctcgccgg tgacgccggc aagagcatcg cggtcacatcg cccgacggcc
      4671      1200
E--> 4672      gtcgacccca aggtcaccgg cctgggcagc gccacgctcg tcccggactc ggcggcgggc
      4673      1260
E--> 4674      cactcgaca ccatcaaggc ccgcgcgggt gcgggtgcga cggtgacgta cgagacgggt
      4675      1320
E--> 4676      gaggagacct tcgggacgca gatcccggcg gggaaacctca gcccggcgtt caaccagggc
      4677      1380
E--> 4678      caccagctcg agccgggcaa ggcggggggc ctgtacgacg gcacgctgac cgtgcccgcc
      4679      1440
E--> 4680      gacggcgagt accgcatcgc ggtccgtgcc accggtgggt acgccacggt gcagctcggc
      4681      1500
E--> 4682      agccacacca tcgaggccgg tcaggtctac ggcaaggtga gcagcccgt cctcaagctg
      4683      1560
E--> 4684      accaagggca cgcacaagct cacgatctcg ggcttcgcga tgagtgccac cccgtctctc
      4685      1620
E--> 4686      ctggagctgg gctgggtgac gccggcgggc gccgacgcga cgatcgcgaa ggccgtggag
      4687      1680
E--> 4688      tcggcgcgga aggcccgta cggcggtcgtc ttcgcctacg acgacggcac cgaggcgctc
      4689      1740
E--> 4690      gaccgtccga acctgtcgct gccgggtacg caggacaagc tgatctcggc tgtcgcgac
      4691      1800
E--> 4692      gccaacccga acacgatcgt ggtcctcaac accggttcgt cgggtgctgat gccgtggctg
      4693      1860
E--> 4694      tccaagaccc gcgcggctct ggacatgtgg taccggggcc aggcggggcg cgaggccacc
      4695      1920
E--> 4696      gccgcgctgc tctacggtga cgtcaaccgc agcggcaagc tcacgcagag cttcccggcc

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

4697 1980
E--> 4698 gccgagaacc agcacgcggt cgccggcgac ccgacaagct acccgggcgt cgacaaccag
4699 2040
E--> 4700 cagacgtacc gcgagggcat ccacgtcggg taccgctggt tcgacaagga gaacgtcaag
4701 2100
E--> 4702 ccgctgttcc cgttcgggca cggcctgtcg tacacctcgt tcacgcagag cgccccgacc
4703 2160
E--> 4704 gtcgtgcgta cgtccacggg tgggtctgaag gtcacggtca cggtcgcgaa cagcgggaag
4705 2220
E--> 4706 cgcgccggcc aggaggtcgt ccaggcgtag ctcggtgccg gcccgaaagt gacggctccg
4707 2280
E--> 4708 caggcgaaga agaagctcgt gggctacacg aaggctctcg tcgccgcggg cgaggcgaag
4709 2340
E--> 4710 acggtgacgg tgaacgtcga ccgccgtcag ctgcagaccg gttcgtcctc cgccgacctg
4711 2400
E--> 4712 cggggcagcg ccacgggtcaa cgtctggtga
4713 2430
4840 <210> SEQ ID NO: 26
4841 <211> LENGTH: 1011
4842 <212> TYPE: DNA
4843 <213> ORGANISM: Streptomyces venezuelae
4845 <400> SEQUENCE: 26
E--> 4846 atggcaatgc gcgactccat accgaggcga gcggaccgcg acacccttcg ccgcgaatta
4847 60
E--> 4848 ggccagaact tccttcagga cgacagagcc gtgcgcaatc tcgtcacgca tgtcgagggg
4849 120
E--> 4850 gacggtagga acgttctcga aatcggcccc ggaaagggcg cgataaccga ggagttggtg
4851 180
E--> 4852 cgctccttcg acaccgtgac ggtcgtggag atggaccgcg actgggcccg gcatgtgcgg
4853 240
E--> 4854 cggaaattcg aaggggagag ggtcaccgta ttccaggggtg atttctcga cttccgcatt
4855 300
E--> 4856 ccgcgcgata tcgacaccgt cgtcggaaac gttcccttcg gcatcacgac ccagattctc
4857 360
E--> 4858 cggagtctcc tggaatcgac gaactggcag tcggcgggcc tgatagtga gtgggaggtc
4859 420
E--> 4860 gcccgcaaac gcgcgggtcg cagcggcgga tcgtctctca cgacctctg ggccccctgg
4861 480
E--> 4862 tacgagttcg cggtecacga ccgcgtccgc gcctcgtcgt tccgtccgat gccccgcgtc
4863 540
E--> 4864 gacggcgggc tcctgacgat caggcgacgc cccagcccc tgctgccccg gagcgcgagc
4865 600
E--> 4866 cgcgccttcc agaacttcgc cgaagccgtc ttcaccggcc ccggacgggg cctcgcggag
4867 660
E--> 4868 atcctccggc gccacatccc caagcggacc taccgttccc tcgccgaccg ccacggaatt
4869 720
E--> 4870 ccggacggcg gactgccgaa ggacctcacg ctcacccaat ggatcgccct tttccaggcc
4871 780
E--> 4872 tcccagccga gttacgcgcc gggggcgccc ggcacgcgca tgccgggcca gggcggtggc

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:28

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

      4873      840
E--> 4874      gccggcggca gggactatga ctcgagacg agcagggccg ccgtgcccgg gagccgcaga
      4875      900
E--> 4876      tacggcccca cgcgcgggcg cgaacctgc gcaccccgcg cacaggtcgg gcagaccaag
      4877      960
E--> 4878      ggccgccagg gcgcgcgagg ctcgctgtac ggacgccgca cgggccgtta g
      4879      1011
4930 <210> SEQ ID NO: 28
4931 <211> LENGTH: 969
4932 <212> TYPE: DNA
4933 <213> ORGANISM: Streptomyces venezuelae
4935 <400> SEQUENCE: 28
E--> 4936      atggcatttt ccccgagggg cgcccgacac gagctcggtc agaacttcct cgtcgaccgg
      4937      60
E--> 4938      tcagtgatcg acgagatcga cggcctggtg gccaggacca agggtcggat actggagatc
      4939      120
E--> 4940      ggtccgggtg acgggcgcct gacctgccc ctgagcaggc acggcaggcc gatcaccgcc
      4941      180
E--> 4942      gtcgagctcg acggccggcg cgcgcagcgc ctcggtgccc gcaccccgcg tcatgtgacc
      4943      240
E--> 4944      gtggtgcacc acgaacttcct gcagtaccgg ctgccgcgca acccgcatgt ggtcgtcggc
      4945      300
E--> 4946      aacgtcccct tccatctgac gacggcgatc atgcggcggc tgctcgacgc ccagcactgg
      4947      360
E--> 4948      cacaccgcgg tccctctcgt ccagtgggag gtcgcccggc gccggggccgg cgtcggcggg
      4949      420
E--> 4950      tcgacgctgc tgacggccgg ctggggcgccc tggtagaggt tcgacctgca ctcccgggtc
      4951      480
E--> 4952      cccgcgcggg ccttcctgct gatgccgggc gtggacggag gagtactggc catccggcgg
      4953      540
E--> 4954      cggtcgcgcg cgctcgtggg ccagggtgaag acgtaccagg acttcgtacg ccagggtgttc
      4955      600
E--> 4956      accggcaagg ggaacgggct gaaggagatc ctgcggcgga ccggggcgat ctgcgacggg
      4957      660
E--> 4958      gacctggcga cctggtctgc gaggaacgag atctcgccgc acgcgctgcc caaggacctg
      4959      720
E--> 4960      aagcccgggc agtgggcgtc gctgtgggag ctgaccggcg gcacggccga cggatccttc
      4961      780
E--> 4962      gacgggtacg cggggcggtg cgcggccgga tcgcacgggg cggtcgggt cggggccggg
      4963      840
E--> 4964      caccggggcg gccgggtgtc cgcgagccgg cggggcggtc cgcaggcgcg gcgcggccgg
      4965      900
E--> 4966      gggcatgcgg tacggagctc cacggggacc gagccgaggt ggggcagggg gcgggcggag
      4967      960
E--> 4968      agcgcgtga
      4969      969
6517 <210> SEQ ID NO: 34
6518 <211> LENGTH: 4689
6519 <212> TYPE: DNA

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

6520 <213> ORGANISM: Streptomyces venezuelae
6522 <400> SEQUENCE: 34
E--> 6523   atggcgaaca acgaagacaa gctccgcgac tacctcaagc gcgtcaccgc cgagctgcag
6524   60
E--> 6525   cagaacacca ggcgtctgcg cgagatcgag ggacgcacgc acgagccggt ggcgatcgtg
6526   120
E--> 6527   ggcattggcct gccgcctgcc gggcgggtgtc gcctcgcccg aggacctgtg gcagctgggtg
6528   180
E--> 6529   gccggggacg gggacgcgat ctccggagttc ccgcaggacc gcggctggga cgtggagggg
6530   240
E--> 6531   ctgtacgacc ccgacccgga cgcgtccggc aggacgtact gccggtcgag cggattcctg
6532   300
E--> 6533   cagcagcccg gcgagttcga cgcgcacttc ttccgggatct cgcgcgcgga ggcctcgcgc
6534   360
E--> 6535   atggacccgc agcagcgact gtccctcacc accgcgtggg aggcgatcga gacgcggggc
6536   420
E--> 6537   atcgacccga cggccctgaa gggcagcggc ctccggcgtct tcgtcggcgg ctggcacacc
6538   480
E--> 6539   ggctacacct cggggcagac caccgcctgt cagtcgcccg agctggaggg ccacctggtc
6540   540
E--> 6541   agcggcgcgg cgctgggctt cctgtccggc cgtatcgctt acgtcctcgg tacggacgga
6542   600
E--> 6543   ccggccctga ccgtggacac ggcttgcctg tcctcgtctg tcgccctgca cctcgcctgt
6544   660
E--> 6545   caggccctcc gcaagggcga gtgcgacatg gccctcgcgc gtggtgtcac ggtcatgccc
6546   720
E--> 6547   aacgcggacc tggtcgtgca gttcagccgg cagcgcgggc tggccgcgga cggccggctc
6548   780
E--> 6549   aaggcgttcg ccacctcggc ggacggcttc ggcgcgcggg agggcgccgg agtcctgctg
6550   840
E--> 6551   gtggagcgcc tgtcggacgc ccgcgcgaac ggacaccgga tcctcgcggt cgtccgcggc
6552   900
E--> 6553   agcgcgggtc accaggacgg cgcagcaac ggctcaccg ctccgcacgg gccctcccag
6554   960
E--> 6555   cagcgcgtca tccgacgggc cctggcggac gcccggtcgc cgcggggtga cgtggacgtc
6556   1020
E--> 6557   gtcgagggcg acggcacggg cagcgggtc ggcgaccgga tcgagggcga ggccctcctc
6558   1080
E--> 6559   gccacctacg gccaggagaa gagcagcgaa cagccgctga ggctggggcg gttgaagtcg
6560   1140
E--> 6561   aacatcgggc acacgcaggc cgcggccggt gtcgcaggtg tcatcaagat ggtccaggcg
6562   1200
E--> 6563   atgcgccacg gactgctgcc gaagacgctg cagctcgacg agccctcggga ccagatcgac
6564   1260
E--> 6565   tggtcggcgg gcacgggtga actcctcacc gaggcgctc actggccgga gaagcaggac
6566   1320
E--> 6567   ggcgggctgc gccgcgcggc tgtctcctcc ttccgcatca gcgggacgaa cgcgcacgtc
6568   1380
E--> 6569   gtccctggagg agggcccggc ggtcagggac tccccggcgc tcgagccgcc ggccgggtggc

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

6570 1440
E--> 6571 ggtgtggtgc cgtggccggt gtccgcgaag actccggccg cgctggacgc ccagatcggg
6572 1500
E--> 6573 cagctcgcgc cgtaacgcga cggtcgtacg gacgtggatc cggcgggtggc cgcgcgcgcc
6574 1560
E--> 6575 ctggtcgaca gccgtacggc gatggagcac cgcgcggctc cggtcggcga cagccgggag
6576 1620
E--> 6577 gcactgcggg acgccctgcg gatgccgaa ggactggtac gcggcacgtc ctccgacgtg
6578 1680
E--> 6579 ggccgggtgg cgttcgtctt ccccgccag ggcacgcagt gggcggcat gggcgccgaa
6580 1740
E--> 6581 ctccctgaca gtcaccgga gttcgtctgc tcgatggccg aatgcgagac cgcgtctctc
6582 1800
E--> 6583 cgctacgtcg actggtctct tgaagccgtc gtccgacagg aaccggcgc acccacgtc
6584 1860
E--> 6585 gaccgcgtcg acgtcgtcca gcccgtagc ttcgtctgca tggctctcgt ggcaaggtc
6586 1920
E--> 6587 tggcagcacc acggcatcac ccccgaggc gtcgtcggc actcgcagg cgagatcgc
6588 1980
E--> 6589 gccgcgtacg tcgccgtgc actcaccctc gacgacgcc cccgcgtcgt caccctgcgc
6590 2040
E--> 6591 agcaagtcca tcgccccca cctcgccggc aaggcgga tgatctccct cgcctcgc
6592 2100
E--> 6593 gaggcgccg tcctgaagcg actgagcgc ttcgacggc tctccgtcgc cgccgtcaac
6594 2160
E--> 6595 ggccccaccg ccaccgtcgt ctccggcgc ccgaccaga tcgaggaact cgcgcgacc
6596 2220
E--> 6597 tgcgagccg acggcgtcgc tgcgcggatc atcccggtc actacgcctc ccacagccg
6598 2280
E--> 6599 caggctcgaga tcacgagaa ggagctggc gaggtcctc ccgactcgc cccgcaggct
6600 2340
E--> 6601 ccgcacgtgc cgtttctctc caccctcgaa ggcacctgga tcaccgagcc ggtgctcgc
6602 2400
E--> 6603 ggcacctact ggtaccgcaa cctgcgccat cgcgtgggct tcgccccgc cgtggagacc
6604 2460
E--> 6605 ttggcggttg acggtctcac ccacttcac gaggtcagc cccacccgt cctcaccatg
6606 2520
E--> 6607 accctccccg agaccgtcac cggcctcggc accctccgc gcgaacagg aggccaggag
6608 2580
E--> 6609 cgtctggtca cctcactcgc cgaagcctg gccaacggc tcaccatcga ctgggcgccc
6610 2640
E--> 6611 atcctcccca ccgcaaccg ccaccacccc gagctcccca cctacgcctt ccagaccgag
6612 2700
E--> 6613 cgcttctggc tgcagagctc cgcgccacc agcgcgccg acgactggc ttaccgcgtc
6614 2760
E--> 6615 gagtggaaac cgtgacggc ctccggccag gcggacctgt cggggcggtg gatcgtcgc
6616 2820
E--> 6617 gtcgggagcg agccagaagc cgagctgctg ggcgcgtga aggccgcgg agcgaggtc
6618 2880

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

E--> 6619   gacgtactgg aagccggggc ggacgacgac cgtgaggccc tcgccgcccg gctcaccgca
        6620   2940
E--> 6621   ctgacgaccg gcgacggctt caccggcggtg gtctcgctcc tcgacgacct cgtgccacag
        6622   3000
E--> 6623   gtgccttggg tgcaggcaact cggcgacgcc ggaatcaagg cgccctgtg gtccgtcacc
        6624   3060
E--> 6625   cagggcgcggt tctccgtcgg acgtctcgac acccccgccg accccgaccg ggccatgctc
        6626   3120
E--> 6627   tggggcctcg gccgcgtcgt cgcccttgag caccgccaac gctgggcccgt cctcgtcgac
        6628   3180
E--> 6629   ctccccgcc agcccgatgc cgcgcgcctc gccacctcg tcaccgcaact ctccggcgcc
        6630   3240
E--> 6631   accggcgagg accagatcgc catccgcacc accggactcc acgcccgccg cctcgcccg
        6632   3300
E--> 6633   gcacccctcc acggacgtcg gccacccgc gactggcagc cccacggcac cgtcctcacc
        6634   3360
E--> 6635   accggcggca ccggagccct cggcagccac gccgcacgt ggatggccca ccacggagcc
        6636   3420
E--> 6637   gaacacctcc tcctcgtcag ccgcagcggc gaacaagccc ccggagccac ccaactcacc
        6638   3480
E--> 6639   gccgaactca ccgcacggg cgcccgctc accatcgccg cctgcgacgt cgccgacccc
        6640   3540
E--> 6641   caccgcatgc gcacccctct cgacgccatc cccgcccaga cgccctcac cgccgtcgtc
        6642   3600
E--> 6643   cacaccgccc gcgcaccggg cggcgatccg ctggacgtca ccggcccga ggacatcgcc
        6644   3660
E--> 6645   cgcatacctg gcgcgaagac gagcggcgcc gaggtcctcg acgacctgct ccgcggcact
        6646   3720
E--> 6647   ccgctggacg ccttcgtcct ctactcctcg aacgccgggg tctggggcag cggcagccag
        6648   3780
E--> 6649   ggcgtctacg cggcgggcaa cgccacctc gacgcgtcg ccgccggcg ccgcgcccgg
        6650   3840
E--> 6651   ggcgagacgg cgacctcggt cgccctgggg ctctggggcg gcgacggcat gggccggggc
        6652   3900
E--> 6653   gccgacgacg cgtactggca gcgtcgcggc atccgtccga tgagccccga ccgcgccctg
        6654   3960
E--> 6655   gacgaactgg ccaaggccct gagccacgac gagacctcg tcgccgtggc cgatgtcgac
        6656   4020
E--> 6657   tgggagcggt tcgcgcccg gtacacggtg tcccgcccc gccttctgct cgacggcgct
        6658   4080
E--> 6659   ccggaggccc ggcaggcgct cgccgcaccc gtcggtgccc cggtccccg cgacgccgcc
        6660   4140
E--> 6661   gtggcgccga ccgggcagtc gtcggcgctg gccgcgatca ccgcgtccc cgagcccag
        6662   4200
E--> 6663   cgccggccgg cgctcctcac cctcgtcgt acccacgcg cgccgtact cggccattcc
        6664   4260
E--> 6665   tccccgacc ggggtggccc cggccgtgcc ttcaccgagc tcggttcga ctcgtgacg
        6666   4320
E--> 6667   gccgtgcagc tccgaacca gctctccac gtggtcggca acaggctccc cgccaccag

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

6668 4380
E--> 6669 gtcttcgacc acccgacgcc cgccgcactc gccgcgcacc tccacgaggc gtacctcgca
6670 4440
E--> 6671 ccggccgagc cgcccccgac ggactgggag gggcggggtgc gccggggcct ggccgaactg
6672 4500
E--> 6673 cccttcgacc ggctgcggga cgccgggggtc ctcgacaccg tcttgcgcct caccggcatc
6674 4560
E--> 6675 gagcccgagc cgggttccgg cggttcggac ggcggcgccg ccgacctgg tgcggagccg
6676 4620
E--> 6677 gaggcgtcga tcgacgacct ggacgcccag gccctgatcc ggatggctct cggcccccg
6678 4680
E--> 6679 aacacctga
6680 4689
6885 <210> SEQ ID NO: 36
6886 <211> LENGTH: 4041
6887 <212> TYPE: DNA
6888 <213> ORGANISM: Streptomyces venezuelae
6890 <400> SEQUENCE: 36
E--> 6891 atgacgagtt ccaacgaaca gttggtggac gctctgcgcg cctctctcaa ggagaacgaa
6892 60
E--> 6893 gaactccgga aagagagccg tcgccggggc gaccgtcggc aggagcccat ggcatcgtc
6894 120
E--> 6895 ggcgatgagct gccggttcgc gggcggaatc cggtcccccg aggacctctg ggacgccgtc
6896 180
E--> 6897 gccgcgggca aggacctggt ctccgaggta ccggaggagc gcggctggga catcgactcc
6898 240
E--> 6899 ctctacgacc cggtgcccgg ggcgaagggc acgacgtacg tccgcaacgc cgcgttcctc
6900 300
E--> 6901 gacgacgccg ccggattcga cgccggcctt tcgggatct cgcgcgcgca ggccctcgcc
6902 360
E--> 6903 atggacccgc agcagcggca gctcctcgaa gcctcctggg aggtcttcga gcgggcccgc
6904 420
E--> 6905 atcgaccccg cgtcgggtccg cggcaccgac gtcggcgtgt acgtgggctg tggctaccag
6906 480
E--> 6907 gactacgcgc cggacatccg ggtcgccccc gaaggcaccg gcggttacgt cgtcaccggc
6908 540
E--> 6909 aactcctccg ccgtggcctc cgggcgcacg gcgtactccc tcggcctgga gggacccgcc
6910 600
E--> 6911 gtgaccgtgg acacggcgtg ctctctctcg ctcgtcgccc tgcacctcgc cctgaagggc
6912 660
E--> 6913 ctgcggaacg gcgactgctc gacggcactc gtgggcggcg tggccgtcct cgcgacgccg
6914 720
E--> 6915 ggcgcgttca tcgagttcag cagccagcag gccatggccg ccgacggccg gaccaagggc
6916 780
E--> 6917 ttcgcctcgg cggcggacgg cctcgccctg ggcgagggcg tcgcgtact cctcctcgaa
6918 840
E--> 6919 cggtctccg acgcgcggcg caagggccac cgggtcctgg ccgtcgtcgc cggcagcgcc
6920 900
E--> 6921 atcaaccagg acggcgcgag caacggcctc acggctccgc acgggccctc ccagcagcac

```



## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

6922 960
E--> 6923 ctgatccgcc aggccctggc cgacgcgcgg ctcacgtcga gcgacgtgga cgtcgtggag
6924 1020
E--> 6925 ggccacggca cggggacccg tctcggcgac ccgatcgagg cgcagggcgt gtcgccacg
6926 1080
E--> 6927 tacgggcagg ggcgcgcccc ggggcagccg ctgcggctgg ggacgctgaa gtcgaacatc
6928 1140
E--> 6929 gggcacacgc aggccgcttc ggggtgtcgcc ggtgtcatca agatggtgca ggcgctgcgc
6930 1200
E--> 6931 cacgggggtgc tgccgaagac cctgcacgtg gacgagccga cggaccaggt cgactggtcg
6932 1260
E--> 6933 gccggttcgg tcgagctgct caccgaggcc gtggactggc cggagcggcc gggccggctc
6934 1320
E--> 6935 cgccggggcg gcgtctccgc gttcggcgctg ggcgggacga acgcgcacgt cgtcctggag
6936 1380
E--> 6937 gaggcccccg cggtcgagga gtccctgcc gtcgagccgc cggccggtgg cggcgtggcg
6938 1440
E--> 6939 ccgtggcccg tgtccgcgaa gacctcgcc gactggacg ccagatcgg gcagctcgcc
6940 1500
E--> 6941 gcatacgcgg aagaccgcac ggacgtggat ccggcgggtg ccgccgcgc cctggtcgac
6942 1560
E--> 6943 agccgtacgg cgatggagca ccgcgcggtc gcggtcggcg acagccggga ggcactgcgg
6944 1620
E--> 6945 gacgccctgc ggatgccgga aggactggtg cggggcacgg tcaccgatcc gggccgggtg
6946 1680
E--> 6947 gcgttcgtct tccccggcca gggcacgcag tgggcccggc tgggcgcca actcctcgac
6948 1740
E--> 6949 agctcacccg aattcgccgc cgccatggcc gaatgcgaga ccgcactctc cccgtacgtc
6950 1800
E--> 6951 gactggtctc tcgaagccgt cgtccgacag gctcccagcg caccgacact cgaccgcgtc
6952 1860
E--> 6953 gacgtcgtcc agcccgtcac cttcgcgcgc atggtctccc tcgccaaggt ctggcagcac
6954 1920
E--> 6955 caccgcatca cccccaggc cgtcatcggc cactcccagg gcgagatcgc cgccgcgtac
6956 1980
E--> 6957 gtcgcgggtg ccctcaccct cgacgacgcc gtcgtgtcgt tgaccctccg cagcaagtcc
6958 2040
E--> 6959 atcgccgcc acctcgccgg caagggcggc atgatctccc tcgccctcag cgaggaagcc
6960 2100
E--> 6961 acccggcagc gcatcgagaa cctccacgga ctgtcgatcg ccgccgtcaa cgggcctacc
6962 2160
E--> 6963 gccaccgtgg ttccgggcga cccacccag atccaagaac ttgctcaggc gtgtgaggcc
6964 2220
E--> 6965 gacggcatcc gcgcacggat catccccgtc gactacgcct cccacagcgc ccacgtcgag
6966 2280
E--> 6967 accatcgaga acgaactcgc cgacgtcctg gcggggttgt cccccagac accccaggctc
6968 2340
E--> 6969 ccctttctct ccacctcga aggcacctgg atcaccgaac ccgccctcga cggcggtac
6970 2400

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

E--> 6971      tgggtaccgca acctccgcca tcgtgtgggc ttgcccccg cgtcgagac cctcgccacc
      6972      2460
E--> 6973      gacgaaggct tcaccactt catcgaggtc agcgcccacc cgtcctcac catgaccctc
      6974      2520
E--> 6975      cccgacaagg tcaccggcct ggccaccctc cgacgcgagg acggcggaca gcaccgcctc
      6976      2580
E--> 6977      accacctccc ttgccgaggg ctggggccaac ggcctcgccc tcgactgggc ctccctcctg
      6978      2640
E--> 6979      cccgccacgg gcgccctcag ccccgccgtc cccgacctcc cgacgtacgc cttccagcac
      6980      2700
E--> 6981      cgctcgtact ggatcagccc cgcgggtccc ggcgaggcgc ccgcgcacac cgcttcgggg
      6982      2760
E--> 6983      cgcgaggccg tcgccgagac ggggctcgcg tggggcccg gtgccgagga cctcgacgag
      6984      2820
E--> 6985      gagggccggc gcagcgccgt actcgcgatg gtgatgcggc aggcggcctc cgtgctccgg
      6986      2880
E--> 6987      tgcgactcgc ccgaagaggt ccccgctcac cgcccgtgc gggagatcgg cttcgactcg
      6988      2940
E--> 6989      ctgaccgccg tcgacttcg caaccgcgtc aaccggctga ccggtctcca gctgccgccc
      6990      3000
E--> 6991      accgtcgtgt tccagcacc cagcgccgtc gcgctcgccc agcgcatcag cgacgagctg
      6992      3060
E--> 6993      gccgagcgga actgggccgt cgcgagccg tcggatcacg agcaggcgga ggaggagaag
      6994      3120
E--> 6995      gccgcgcgtc cggcgggggc ccgctccggg gccgacaccg gcgcccggc cgggatgttc
      6996      3180
E--> 6997      cgcgccctgt tccggcaggg cgtggaggac gaccggtacg gcgagttcct cgacgtcctc
      6998      3240
E--> 6999      gccgaagcct ccgcgttcg cccgcagttc gcctcgcccg aggcctgctc ggagcggctc
      7000      3300
E--> 7001      gaccgggtgc tgctcgccgg cggctcgacg gaccgggagg aaggccgtgc cgttctcgtc
      7002      3360
E--> 7003      ggctgcaccg gcaccgcggc gaacggcggc ccgcacgagt tcctgcggct cagcacctcc
      7004      3420
E--> 7005      ttccaggagg agcgggactt cctcgccgta cctctccccg gctacggcac gggtaggggc
      7006      3480
E--> 7007      accggcacgg cctcctccc ggccgatctc gacaccgcgc tcgacgccc aaggccgggc
      7008      3540
E--> 7009      atcctccggg ccgcggggga cgcgccgtc gtctgctcg ggcactccgg cggcgcctg
      7010      3600
E--> 7011      ctgcgcacg agctggcctt ccgcctggag cgggcgcacg gcgcgccg ccggcgggatc
      7012      3660
E--> 7013      gtctgggtcg acccctatcc gccgggcat caggagccca tcgagggtg gagcaggcag
      7014      3720
E--> 7015      ctgggcgagg gcctgttcgc gggcgagctg gagccgatgt ccgatgcgcg gctgctggcc
      7016      3780
E--> 7017      atgggcgggt acgcgcggtt cctcgccggc ccgcggccgg gccgcagcag cgcgcccggt
      7018      3840
E--> 7019      cttctgggtc gtgcctccga accgctgggc gactggcagg aggagcgggg cgactggcgt

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

7020 3900
E--> 7021 gcccactggg accttccgca caccgtcgcg gacgtgccgg gcgaccactt cacgatgatg
7022 3960
E--> 7023 cgggaccacg cgccggccgt cgccgaggcc gtctctctct ggctcgacgc catcgagggc
7024 4020
E--> 7025 atcgaggggg cgggcaagtg a
7026 4041
7205 <210> SEQ ID NO: 38
7206 <211> LENGTH: 1251
7207 <212> TYPE: DNA
7208 <213> ORGANISM: Streptomyces venezuelae
7210 <400> SEQUENCE: 38
E--> 7211 gtgcgccgta cccagcaggg aacgaccgct tctcccccgg tactcgacct cggggccctg
7212 60
E--> 7213 gggcaggatt tcgcggccga tccgtatccg acgtacgcga gactgcgtgc cgaggggtccg
7214 120
E--> 7215 gccacccggg tgcgcacccc cgagggggac gaggtgtggc tggtcgtcgg ctacgaccgg
7216 180
E--> 7217 gcgcggggcg tcttcgccga tccccggttc agcaaggact ggcgcaactc cagcactccc
7218 240
E--> 7219 ctgaccgagg ccgagggcgc gctcaaccac aacatgctgg agtccgacct gcccgggcac
7220 300
E--> 7221 acccggtctgc gcaagctggt ggcccgtgag ttcacatgc gccgggtcga gttgctgcgg
7222 360
E--> 7223 ccccggggtcc aggagatcgt cgacgggctc gtggacgcc a tgctggcggc gcccgacggc
7224 420
E--> 7225 cgcgcgatc tgatggagtc cctggcctgg ccgctgccga tcaccgtgat ctccgaactc
7226 480
E--> 7227 ctcggcgtgc ccgagccgga ccgcgcgcc ttccgcgtct ggaccgacgc cttegtcttc
7228 540
E--> 7229 ccggacgatc ccgcccaggc ccagaccgcc atggccgaga tgagcggcta tctctcccg
7230 600
E--> 7231 ctcatcgact ccaagcgcg gcaggacggc gaggacctgc tcagcgcgt cgtgcggacc
7232 660
E--> 7233 agegacgagg acggctcccg gctgacctcc gaggagctgc tcggtatggc ccacatcctg
7234 720
E--> 7235 ctcgtcgagg ggcacgagac cacgggtcaat ctgategcc aacggcatgta cgcgctgctc
7236 780
E--> 7237 tcgcaccccg accagctggc cgccctgcgg gccgacatga cgctcttgg aaggcggtg
7238 840
E--> 7239 gaggagatgt tgcgctacga gggcccgggt gaatccgcga cctaccgctt cccggtcgag
7240 900
E--> 7241 cccgtcgacc tggacggcac ggtcatcccg gccggtgaca cggtcctcgt cgtcctggcc
7242 960
E--> 7243 gacgcccacc gcacccccga gcgcttcccg gacccgcacc gcttcgacat ccgcccggac
7244 1020
E--> 7245 accgcccggc atctcgctt cgcccaaggc atccacttct gcatcggcgc ccccttggcc
7246 1080
E--> 7247 cggttggagg cccggatcgc cgtccgcgcc cttctcgaac gctgcccgga cctcgccctg

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

7248 1140
E--> 7249 gacgtctccc ccggcggaact cgtgtggtat ccgaaccgga tgattcgcgg gctcaaggcc
7250 1200
E--> 7251 ctgccgatcc gctggcgggcg aggacgggag gcgggcccgc gtaccggttg a
7252 1251
7313 <210> SEQ ID NO: 40
7314 <211> LENGTH: 2787
7315 <212> TYPE: DNA
7316 <213> ORGANISM: Streptomyces venezuelae
7318 <400> SEQUENCE: 40
E--> 7319 atgaatctgg tggaacgcga cggggagata gcccatctca gggccgttct tgacgcattc
7320 60
E--> 7321 gccgcaggtg acgggacgct cttactcgtc tccggaccgg ccggcagcgg gaagacggag
7322 120
E--> 7323 ctgctgcggt cgctccgccg gctggccgcc gagcgggaga cccccgtctg gtcggtccgg
7324 180
E--> 7325 gcgctgcggg gtgaccgcga catccccctg ggcgtcctct gccagttact ccgcagcgcc
7326 240
E--> 7327 gaacaacacg gtgccgacac ctccgccgtc cgcgacctgc tggacgcgcg ctgcggcgcg
7328 300
E--> 7329 gccggaaacc tcacctcccc cgccgacggc ccgctccggc tcgacgagac acaccgctg
7330 360
E--> 7331 caccactggc tgctctccgt ctcccgccgc accccgttcc tcgtcgccgt cgacgacctg
7332 420
E--> 7333 acccacgccc acaccgcgtc cctgagggtc ctctgtact gcgccgccc aacacgaccg
7334 480
E--> 7335 ggcggcatcg gcttcgtcat gaccgagcgg gcctcgcagc gcgccggata ccgggtgttc
7336 540
E--> 7337 cgcgcgcgagc tgctccgcca gccgactgc cgcaacatgt ggctctccgg gcttcccccc
7338 600
E--> 7339 agcgggggtac gccagttact cgcccactac tacggccccg aggcgcgcca gcggcgggcc
7340 660
E--> 7341 cccgcgtacc acgcgacgac cggcgggaac ccgctgctcc tgcgggcgct gaccaggac
7342 720
E--> 7343 cggcaggcct cccacaccac cctcggcgcg gccggcgggc acgagcccgt ccacggcgac
7344 780
E--> 7345 gccttcgccc aggcggtcct cgactgcctg caccgcagcg ccgagggcac actggagacc
7346 840
E--> 7347 gcccgtggc tcgcggtcct cgaacagtcc gaccgctcc tgggtggagcg gctcacggga
7348 900
E--> 7349 acgaccgccc ccgcccgcga gcgccacatc caggagctcg ccgccatcg cctcctggac
7350 960
E--> 7351 gaggacggca ccctgggaca gccgcgatc cgcgaggccg ccctccagga cctgcccggc
7352 1020
E--> 7353 ggcgagcgca ccgaactgca ccggcgcgcc gcggagcagc tgcaccggga cggcgccgac
7354 1080
E--> 7355 gaggacaccg tggcccgcga cctgctggtc ggcgggcgcc ccgacgtcc ctgggcgctg
7356 1140
E--> 7357 cccctgctcg aacggggcgc gcagcaggcc ctgttcgacg accgactcga cgacgccttc

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

```

7358 1200
E--> 7359   cggatcctcg agttcgccgt gcggtcgagc accgacaaca cccagctggc ccgcctcgcc
7360 1260
E--> 7361   ccacacctgg tcgcggcctc ctggcggatg aaccgcaca tgacgacctg ggcctcgca
7362 1320
E--> 7363   ctcttcgacc ggctcctgag cgggtgaactg ccgcccagcc acccggtcat ggcctcgatc
7364 1380
E--> 7365   cgctgcctcg tctggtacgg gcggtgccc gagggcgccg acgcgctgtc ccggtcgcg
7366 1440
E--> 7367   cccagctccg acaacgatgc cttggagctg tcgctaccc ggatgtggct cgcggcgctg
7368 1500
E--> 7369   tgcccgccgc tctggagtc cctgcgggc acgcggagc cggagcgggg tcccgcccc
7370 1560
E--> 7371   gtacggctcg cgcgcggac gaccgcgtc caggcccagg ccggcgctct ccagcggggc
7372 1620
E--> 7373   ccggacaacg cctcggtcgc gcaggccgaa cagatcctgc agggctgcg gctgtcgag
7374 1680
E--> 7375   gagacgtacg aggccttga gacggccctc ttggtcctcg tccacgccga ccggtcgac
7376 1740
E--> 7377   cgggcgctgt tctggtcgga cgcctgtc ggcgaggccg tggagcgggc gtcgctcggc
7378 1800
E--> 7379   tgggagggcg tcttcgccgc gaccggggc atgatcgga tccgctgcg cgacctccg
7380 1860
E--> 7381   acggcgcggg agcgggccga gctggcgctc tcccacgcg ccggcgagag ctggggcctc
7382 1920
E--> 7383   gccgtgggca tgccctctc cgcgctgtc ctcgctgca cggaggccgg cgagtacga
7384 1980
E--> 7385   caggcgagc gggctctgc gcagccggtg ccggacgga tgttcgactc gcggcacggc
7386 2040
E--> 7387   atggagtaca tgcacgccg gggccgctac tggctggcga cgggcccggc gcacgcggc
7388 2100
E--> 7389   ctgggagagt tcatgctctg cggggagatc ctgggcagct ggaacctga ccagccctcg
7390 2160
E--> 7391   atcgtgcctt ggcggacctc cgcgcgcgag gtgtacctgc ggctcggcaa ccgccagaag
7392 2220
E--> 7393   gccagggcgc tggccgaggc ccagctgcc ctggtgcggc ccgggcgtc ccgcacctcg
7394 2280
E--> 7395   ggtctaccc tgccggctct ggcggcgggc gtggacggcc agcaggcgga gcggctgcac
7396 2340
E--> 7397   gccgagggcg tcgacatgt gcacgacagc ggcgaccggc tcgaacacgc ccgcgcgtc
7398 2400
E--> 7399   gccgggatga gccgccacca gcaggcccag ggggacaact accgggagag gatgacggc
7400 2460
E--> 7401   cggtcgccg gcgacatggc gtgggcctgc ggcgcgtacc cgctggccga ggagatcgt
7402 2520
E--> 7403   ccgggcccgc gcggccgcc ggcgaaggcg gtgagcacgg agctggaact gccgggcggc
7404 2580
E--> 7405   ccggacgtcg gcctgtctc ggaggccgaa cgcgggtgg cggccctggc agcccagga
7406 2640

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/988,384

DATE: 11/26/2001

TIME: 15:23:29

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

E--> 7407     ttgacgaacc gccagatagc ggcgcggctc tgcgtcaccg cgagcacggg cgaacagcac  
7408     2700

E--> 7409     ctgacgcgcg tctaccgcaa actgaacgtg acccgccgag cagacctccc gatcagcctc  
7410     2760

E--> 7411     gcccaggaca agtccgtcac ggctga  
7412     2787

7537 <210> SEQ ID NO: 42  
7538 <211> LENGTH: 27  
7539 <212> TYPE: DNA  
7540 <213> ORGANISM: Streptomyces venezuelae  
7542 <400> SEQUENCE: 42

E--> 7543     cccgaattcg ccgccgccat ggccgaa  
7544     27

7546 <210> SEQ ID NO: 43  
7547 <211> LENGTH: 35  
7548 <212> TYPE: DNA  
7549 <213> ORGANISM: Streptomyces venezuelae  
7551 <400> SEQUENCE: 43

E--> 7552     gtgatgcac ggctcggcga cggcccagtt ccgct  
7553     35

7555 <210> SEQ ID NO: 44  
7556 <211> LENGTH: 45  
7557 <212> TYPE: DNA  
7558 <213> ORGANISM: Streptomyces venezuelae  
7560 <400> SEQUENCE: 44

E--> 7561     atgcatcacc accaccacca ctgagggggc gggcaagtga ccgac  
7562     45

7564 <210> SEQ ID NO: 45  
7565 <211> LENGTH: 33  
7566 <212> TYPE: DNA  
7567 <213> ORGANISM: Streptomyces venezuelae  
7569 <400> SEQUENCE: 45

E--> 7570     gggctctagag ctgcaccggc gggctcgtagc gga  
7571     33

7573 <210> SEQ ID NO: 46  
7574 <211> LENGTH: 27  
7575 <212> TYPE: DNA  
7576 <213> ORGANISM: Streptomyces venezuelae  
7578 <400> SEQUENCE: 46

E--> 7579     gaattcatcg agggggcggg caagtga  
7580     27

## VERIFICATION SUMMARY

DATE: 11/26/2001

PATENT APPLICATION: US/09/988,384

TIME: 15:23:30

Input Set : A:\Sequence Listing.txt

Output Set: N:\CRF3\11212001\I988384.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No  
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:3557 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:6  
M:332 Repeated in SeqNo=6  
L:3836 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:7  
M:254 Repeated in SeqNo=7  
L:3944 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:9  
M:254 Repeated in SeqNo=9  
L:4070 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:11  
M:254 Repeated in SeqNo=11  
L:4152 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:13  
M:254 Repeated in SeqNo=13  
L:4244 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:15  
M:254 Repeated in SeqNo=15  
L:4344 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:17  
M:254 Repeated in SeqNo=17  
L:4412 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:19  
M:254 Repeated in SeqNo=19  
L:4524 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:21  
M:254 Repeated in SeqNo=21  
L:4632 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:23  
M:254 Repeated in SeqNo=23  
L:4846 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:26  
M:254 Repeated in SeqNo=26  
L:4936 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:28  
M:254 Repeated in SeqNo=28  
L:6523 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:34  
M:254 Repeated in SeqNo=34  
L:6891 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:36  
M:254 Repeated in SeqNo=36  
L:7211 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:38  
M:254 Repeated in SeqNo=38  
L:7319 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:40  
M:254 Repeated in SeqNo=40  
L:7543 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:27 SEQ:42  
L:7552 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:35 SEQ:43  
L:7561 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:44  
L:7570 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:33 SEQ:45  
L:7579 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:27 SEQ:46  
L:7588 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:31 SEQ:47  
L:7597 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:30 SEQ:48  
L:7606 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:31 SEQ:49  
L:7615 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:41 SEQ:50  
L:7624 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:32 SEQ:51  
L:7633 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:52  
M:254 Repeated in SeqNo=52